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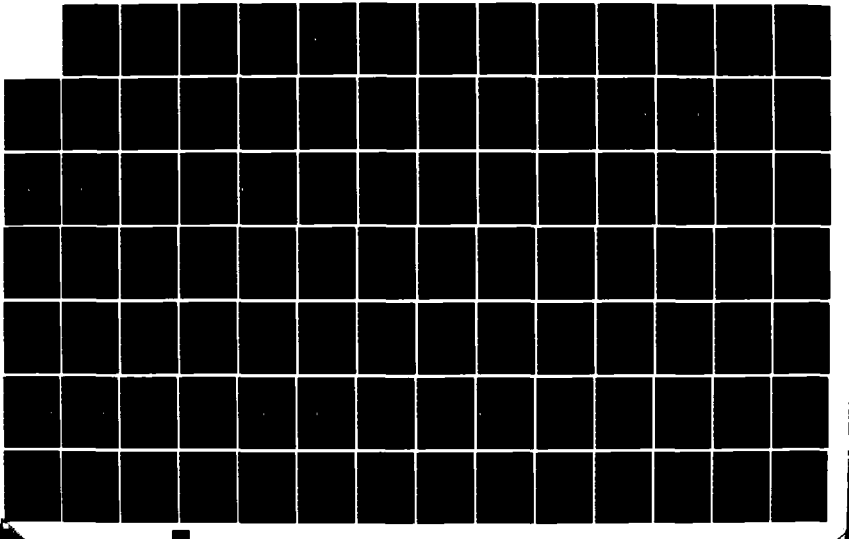

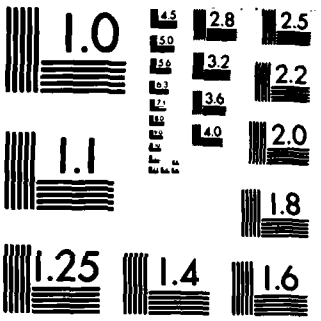

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THESIS

DOCUMENTATION AND EVALUATION OF DEPOT LEVEL MAINTENANCE COST ACCUMULATION AND REPORTING AT THE AIR LOGISTICS CENTER SACRAMENTO, CALIFORNIA

by

Frederick David Gorris

June 1984

Thesis Advisors: Shahid Ansari
Kenneth Euske

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20. ABSTRACT (Continued)

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The results of this study indicated that if SACRAMENTO ALC is representative of all ALC's the Air Force has a workable cost accumulation and reporting system which is capable and responsive in providing the maintenance cost data required by OASD. This study further revealed that in its present form report RCS DD-M(A) 1397 is subject to misinterpretation and should be revised or annotated.

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by

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Lieutenant Commander, United States Navy
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Submitted in partial fulfillment of the requirements for the degree of

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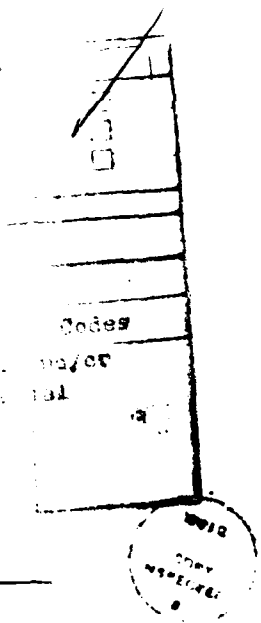

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I. INTRODUCTION

A. THESIS OBJECTIVE

The purpose of this ~~research~~ thesis is to document the information structure for the cost accounting, accumulating, evaluating, and reporting of depot level maintenance and repair by the Air Force through its various Air Logistics Centers throughout the United States. One objective of this research is to provide a greater understanding of exactly how this information complies with and fulfills the requirements of the Office of the Assistant Secretary of Defense (OASD, MI&L) in providing relevant, useful, and timely information to OASD in meeting Department of Defense and higher level management decision needs. These requirements are delineated in OASD's uniform cost accounting handbook guidelines established in DOD 7220.29-H, the Department of Defense Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting Handbook. Specifically, this project focuses on (1) the cost accounting, cost reporting procedures, and data entered by the Sacramento Air Logistics Center, Sacramento, California in its compliance with OASD Report RCS DD-M(A) 1397 and (2) how this same data is used by the Office of the Secretary of Defense.

B. HISTORY OF THE DEPOT MAINTENANCE COST ACCOUNTING SYSTEM

The Department of Defense attempted, as early as 1963, to establish a cost accounting and reporting system which would apply to all service depot level maintenance activities. This uniform system was deemed necessary for two reasons. One, there were a variety of accounting practices and procedures in use across and within the individual services themselves. Two, the aggregated costs for repair, overhaul and maintenance activities were not concise or defined well enough to make adequate decisions.

According to Title IV of the National Security Act of 1947, as amended by Department of Defense regulations and approved supplemental provisions, the Department of the Air Force may finance, under the Air Force Industrial Fund (AFIF) , organic and contract depot level maintenance at five Air Logistic Centers.

As noted in Air Force Logistics Command Regulation 170-10 of 28 June 1979, under the management control of the Air Force Logistics Center, depot maintenance provides for:

(1) Overhaul, conversion, progressive maintenance, modernization, modernization-conversion, interim rework, modification, and repair of aircraft, missiles, target drones, engines, accessories, components, and equipment;

(2) The manufacture of parts and assemblies required to support the above; and

(3) The furnishing of other authorized services or products for the Department of the Air Force and other agencies of the DOD. When directed or authorized by the Air Force Logistics Command or higher authority, depot maintenance supplies these products or services to agencies of other departments of the U.S. Government, and to private parties and other agencies.

On 1 July 1968, the Depot Maintenance Service, Air Force Industrial Fund (DMS, AFIF) was implemented at all air logistics centers (ALCs) and the Aerospace Guidance and Metrology Center (AGMC), Newark AFS. In 1972, the Office of the Assistant Secretary of Defense (Manpower, Installation and Logistics) chartered the Joint Logistics Commanders (JLC) panel, whose purpose was to de elop and promulgate a uniform depot maintenance cost accounting manual. The fruits of this panel's efforts were published under the auspices of the OASD (Management Systems) as Department of Defense Instruction 7220.29 "Guidance for Cost Accounting and Reporting for Depot Maintenance and Maintenance Support," October 20, 1975 and 7220.29H "Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting Handbook," October 21, 1975. The target date for the implementation of this new system was October 1, 1976.

Specifically, the objectives of the new system were stated in the Department of Defense Instruction 7220.29-H as follows:

(1) To establish a uniform cost accounting system for use in accumulating the costs of depot maintenance activities as they relate to the weapon systems supported or items maintained. This information would enable managers to compare unit repair costs with replacement cost.

(2) To assure uniform recording, accumulating and reporting on depot maintenance operations and maintenance support activities so that comparison of repair costs can be made between depots and between depots and contract sources performing similar maintenance functions.

(3) To assist in measuring productivity, developing performance and cost standards and determining areas for management emphasis, which would enable managers to evaluate depot maintenance and maintenance support activities for efficient resource use.

(4) To provide a means of identifying maintenance capability and duplication of capacity and indicating both actual and potential areas for interservice support of maintenance workload.

C. CURRENT STATUS

The system is not fully implemented by any of the services and discrepancies in reporting still exist. Costs continue to be identified and accounted for on differing bases among and between depots of the services. Instances of non-compliance with directives because of longstanding differences between the services and the Department of Defense concerning accounting practices have resulted in significant errors in data reported to OASD Comptroller. Presently, efforts to speed the installation and acceptance of the uniform cost accounting system are continuing. The JLC Panel has established the Joint Depot Maintenance Analysis Group (JDMAG) whose goal is to assure the elimination or explanation of costing inconsistencies between the services. The JLC Aeronautical Depot Maintenance Study Panel (JADMAG) established an ad hoc group to monitor the implementation of the Department of Defense Instruction 7220.29-H and attempt resolution of service differences with Department of Defense guidance. During the period of its existence, the group identified twenty-eight basic accounting areas of disagreement and recommended ninety-five changes to the handbook. The group used the Joint Interpretive Issuance (JII) as the vehicle to address the problem areas that it had discovered and to express its opinion or recommendation. Through its close coordination with the OASD Comptroller,

the group was effective in reconciling the twenty-eight problematic differences. The temporary charter for the ad hoc group lapsed in December 1979 and in spite of its effectiveness, as late as April 1981, eighteen areas of the Department of Defense guidance had not been fully implemented by one or more of the services. [Ref. 1]

D. METHODOLOGY

The procedure followed in this research project is to describe the organizational structure that Sacramento employs to meet its requirements as a Depot Level Maintenance Facility and the environment in which the Sacramento ALC exists. This is followed by a brief description of how costs are accumulated, aggregated, and reported for the varying tasks assigned. Next, the costs reported by numerous facilities for several similar items are analyzed. Finally, the research concludes with major findings, conclusions, and recommendations for further investigation. It should be noted that this research is only one part of a larger project to review the problems of uniform depot maintenance cost accounting throughout the military services. The other studies contributing to this project are presently being conducted at the Sacramento Army Depot and the Naval Air Rework Facility, Jacksonville, Florida.

II. AIR LOGISTICS CENTER SACRAMENTO, CALIFORNIA

This chapter addresses the mission, organization, and environment of the Sacramento Air Logistics Center. The majority of information concerning this chapter was extracted from the McClellan Air Force Base Impact 83 publication, a command presentation by Comptroller personnel during a base visit, and two subsequent visits.

A. ORGANIZATION

McClellan Air Force Base, located in Sacramento, California is the home for one of the five major Air Logistics Centers serving the Air Force worldwide. The Air Logistics Center Sacramento (ALC), has major depot level maintenance responsibility for the geographic area between 90 degrees East Longitude and 150 degrees West Longitude except Alaska. The Center reports to the Air Force Logistics Command located at Wright Patterson Air Force Base in Ohio. The Air Force Logistics Command reports to the Air Staff and in turn to the Secretary of the Air Force, and the Secretary of the Air Force reports to the Secretary of Defense.

Within the ALC at Sacramento, the major Directorates for the depot maintenance organization include: .Directorate

of Material Management, Directorate of Contracting and Manufacturing, Directorate of Distribution, and Directorate of Maintenance. Also, there are five other major commands within the reporting organization including the Base Commander for McClellan Air Force Base. This functional command structure employs a comparatively high civilian to military mix within the depot maintenance side while employing a comparatively high military to civilian mix on the military base operations side. This appears to be in keeping with the mixes found throughout the ALC's in the United States. [Ref. 2]

A review of the organizational chart in Figure 1 shows how the ALC has both an operational and administrative line of responsibility from the top of the organization down to the individual units. This is typical of the ALC's throughout the U.S. and bears no real variance from the norm. This type of structure does allow the routine administrative tasks to be performed without burdening the operational command with daily tasks. The typical staff support billets (eg, Chaplain and Legal) are observed. It is interesting to note that the Comptroller is a primary staff job on the Base Commander's staff yet designated as additional duty on the staff of the Air Logistics Commander.

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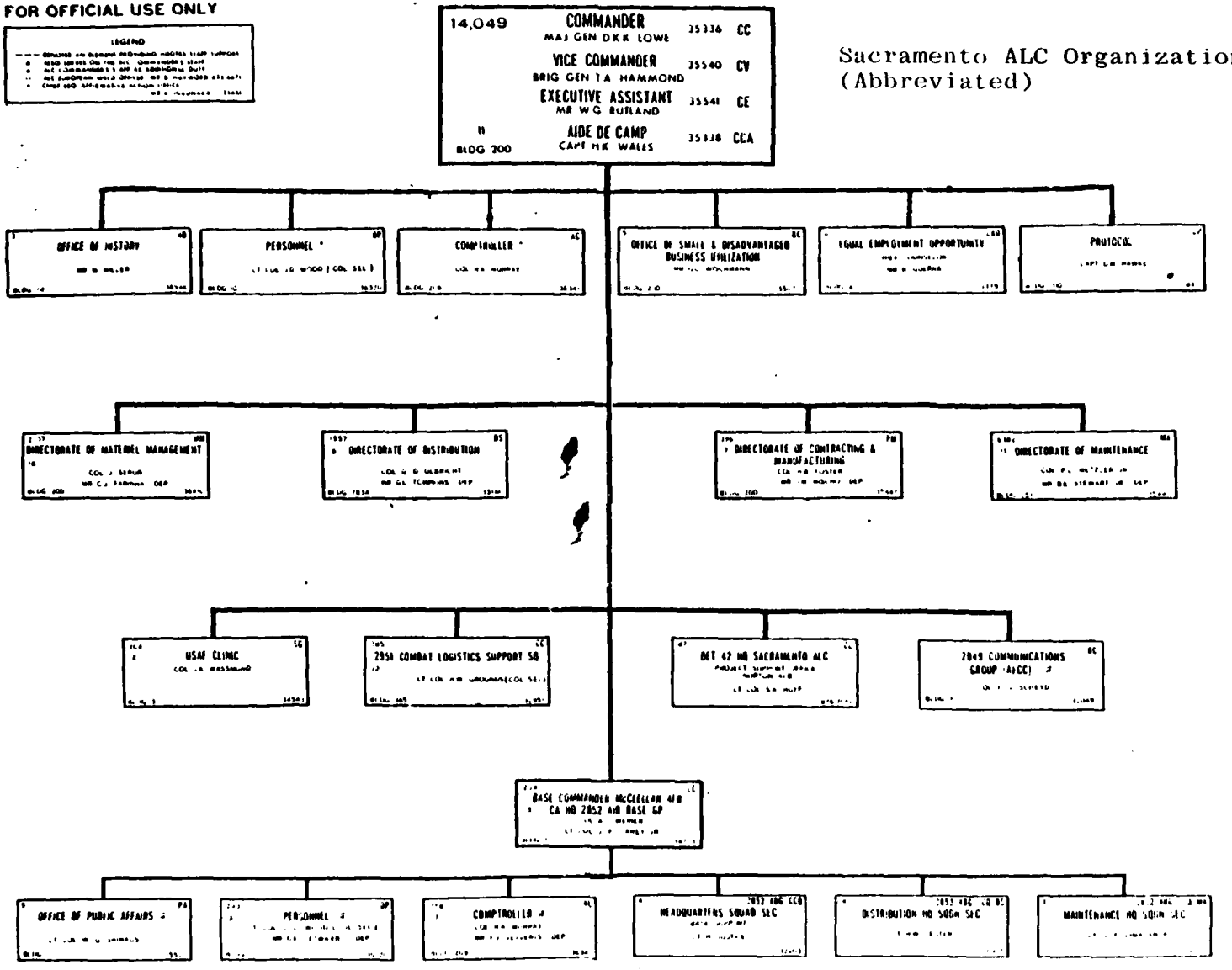

Sacramento ALC Organization
(Abbreviated)

Figure 1 Sacramento ALC

B. MISSION OF THE AIR LOGISTICS CENTER

As stated in Impact '83, the mission of the Sacramento ALC is twofold. First, Sacramento ALC provides world-wide logistics support of assigned weapon systems, equipment, and commodity items. Secondly, Sacramento ALC performs an industrial type mission in providing maintenance, supply, and contracting services essential to the Air Force logistics.

Within the U.S. Air Force, Sacramento ALC currently serves as System Manager for nine major aircraft, has system management responsibility for 231 electronics systems/programs, and 11 projects. This latter responsibility, 11 projects, is broken down into 182 systems in acquisition and seven in space systems including a portion of the National Space Transportation System (Space Shuttle). Sacramento is also the lead ALC for the Missile and Space Consolidated Space Operations Center. [Ref. 3]

Sacramento ALC has world wide item management responsibility for fiber optic components and related items, ground communication components, ground radar units, airframe components, and all airborne and ground generators.

Within the U.S. Air Force inventory, Sacramento AFLC has maintenance responsibility for the repair and modification of the EF/F/FB-111, A-10, F-4, F-106, and the CT-39 training aircraft. Sacramento is also the Technology Repair Center for hydraulics, flight control accessories,

electrical electronics components, and ground communications and electronics. Sacramento also provides the engineering management support for flight testing and evaluation of hardware and software modifications to assigned weapon systems. This test and evaluation involves the identification of a need for modification of software and/or hardware by the user to final implementation and certification of the finished software and hardware products. [Ref. 3]

Further, engineering and reprogramming support is supplied to a rapidly growing number of electronic systems controlled by high speed digital computers. Large-scale Integration Support Facilities (ISF) provide the specialized environment necessary to make changes to these Embedded Computer Systems (ECS) consistent with their systems management objective. [Ref. 3]

Sacramento ALC contracts for material and some services (usually "black box" items) needed for support of its assigned weapon systems and commodity classes as a part of its assigned central acquisition responsibility. It also operates a modern Logistics Material Processing Facility for receiving, material processing, preservation and packaging, crating, and other essential functions to provide the quick and vital distribution of goods to its worldwide customers. [Refs. 3, 4]

C. WORKFORCE AND MONETARY IMPACT

McClellan Air Force Base employs nearly 18000 people, 7204 in primarily general management positions, 6500 blue collar workers, and 3967 military employees representing 567 officers (management) and 3400 airmen. Of those 7204 in General Manager/Schedule positions nearly 2428, or 34% are at the GS-11 level or above. Of this, 6500 are in jobs where the cost accounting system is actively used. [Ref. 3]

For the year 1983, McClellan Air Force base spent $1,578.8 million in appropriated funds and $8.5 million in non-appropriated funds. Of this total expenditure, $446.5 million was spent specifically in support of the AFLC mission as reported to the Office of the Secretary of Defense. McClellan's workforce salaries amount to over $1,104,060,000 annually. Economists have estimated that for each industrial job, two support jobs are created in the surrounding community (ie, El Dorado, Placer, Sacramento, and Yolo counties). Payroll influence in each segment of the surrounding community was based on the "Air Force Salary Impact Report," a standard Air Force Reporting system.

The impact on the surrounding community has been influenced even further by the contracting actions of McClellan. In 1983, there were 178,744 contracting actions. California businesses were successful bidders on over 410

million dollars in contracts, with 46 million dollars remaining in the local economy. The AFLC overall, awarded contracts for $2.1 billion in the fiscal year 1983 with the following distribution: $265.1 million to small business firms; $8.0 million to minority business; and $3.1 to women-owned businesses. [Ref. 3]

D. MANAGEMENT CONTROL SYSTEMS

As noted from interviews with the Assistant Accounting and Finance Branch Officer and with a Division Manager, one of the primary management tools used at the AFLC to evaluate the performance of the depot maintenance sections is the operating budget and its associated ancillary reports (Appendixes A through E). This major accounting system measures performance at three levels: the organizational, the product, and the cost element (direct labor, direct material, and other). The four major accounting systems used to perform the task are: Actual Material Cost System, Labor Distribution and Cost System, Budget and Management Cost System, and the Production Cost System. These accounting systems record, accumulate, and report the costs in over 200 Resource Control Centers (RCC's), 128 production centers (profit centers), and 60 overhead RCC's (cost). [Refs. 4, 5]

The operating budget is formulated after the Directorate of Material Management makes predictions on the expected

workload for the coming year. This prediction is then passed to the Comptroller for extended calculations to prepare the annual operating budget. This budget is then submitted to the Air Force Logistics Command at Wright-Patterson for review along with the inputs for the other AFLC's. The Logistics Command then returns each budget to the respective Center with the necessary modifications to the rate structure so as to have a zero profit/loss within the Air Force Logistic Command Industrial Fund. These modifications are then applied to provide stable rates to all customers throughout the coming year. The adjusted rates are also applied to the specific maintenance jobs. Each job has a fixed price after the job has been evaluated. If this price exceeds 70% of the replacement cost, the customer is appraised of the matter and makes the decision to repair or replace. The price is negotiable only if significant problems are found, otherwise the fixed price remains whether or not the AFLC makes a "profit or loss." The one exception to this policy is MISTR (Management Items Subject to Repair) items where no adjustment is allowed. The year end aggregate costs are forwarded to the Air Force Logistics Command for review, and the Command forwards the data, intact, to OASD. The data sent to the AFLC must be annotated should any figures fall outside the budget by more than 5% (Appendix F). [Ref. 6]

Within the AFLC, the four major accounting systems previously mentioned are used to manage and control costs. The labor data that is provided is one day old and the material costs are one month old. The reported material costs are actual costs. However, the customer is billed for the standard cost. The work production efficiencies for labor are measured against rates that may be up to two years old. These efficiencies are based on historical data that has been accumulated over the years and does not normally take into account any learning curve, training time, or the number of personnel that may be new to the RCC or work center. These composite reports and the associated data are available to the RCC on a daily, weekly, and monthly basis. On a monthly basis, a meeting is held to discuss areas of variances to help better manage the associated costs within the various RCC's. [Refs. 7, 8]

III. COST ACCOUNTING AND ACCUMULATION

This section discusses the various accounting systems that are used at Sacramento Air Force Logistics Center to meet the many requirements of management and higher authority. These systems are described in detail in the second edition of Depot Maintenance Automated Data Systems, written by the Directorate of Maintenance, Warner Robins Air Logistics Center, Robins Air Force Base, Georgia. The information for this section was taken from primarily two sources: Depot Maintenance Automated Data Systems brochure and three visits to McClellan AFLC--two focusing on just the maintenance sections in order to observe the systems in the field and speak with the managers.

The Air Force uses 31 various data systems to record, accumulate, and report data at the Depot Maintenance Level. The systems can be broken down into four Requirement Systems, three Material Systems, seven Production Systems, seven Cost Systems, and ten other Systems. This section starts with how standards are set, the manner in which the various material, manpower, and workload requirements are established. Then the section moves through the accounting systems where costs would actually be accumulated. [Ref. 8]

A. REQUIREMENT SYSTEMS

The depot starts by determining exactly what kind of funding it can expect in the budget years to come, what type of products and services will be in demand, and just what type of workload will be required to meet that demand. Four data systems are used to carry out these objectives: the Equipment Item Requirements System (DO 39), the Recoverable Consumption Item Requirement System (DO 41), the Repair Requirement Computation System (DO 73), and the MISTR (Management of Items Subject to Repair) Requirements, Scheduling, and Analysis System (GO 19C).

The following is a brief description of how each of these systems is used to fit within the greater picture of the previously mentioned Requirements System:

The Equipment Item and the Recoverable Item Requirements Systems, DO 39 and 41, maintain records of items held in the Air Force and their associated usage or failure rates. The input from these two systems generate some of the information for the Repair Requirement Computation System, DO 73. Knowing the repair requirements, the Repair Requirement Computation System now requires inputs to determine just how much of the requirements can be fulfilled by the various maintenance facilities. The Resources Management Division within the AFLC provides this data as to the individual depots planned labor capability, amount of contract work expected, and the

projected sales rate. This sales rate is usually about two years behind the actual rate required for the present year's work. The Resources Management Division also develops the production labor efficiency rate for the year which usually lags the actual rate by one year. Then the DO 73 computer program compares the labor capability with the end item repair requirements. This system makes quarterly updates based on the inputs. These updates, which have a six to nine month lag time before actual production, are used to report the projected repair requirements for the year's forthcoming quarters and the projected requirements for the upcoming fiscal years. The report that reflects this information is called the DO 73.X21.

The DO 73.X21 report is reviewed by both an assigned Item Inventory Manager and a Production Management Specialist to ensure that the information is accurate, valid, and reflects the latest information on generation rates, carcass availability, shop flow times, and parts support before they are forwarded to the production management technician. The production management technician validates this information based on the local maintenance capabilities, equipment status, and maintenance capacity. After agreement by both the Inventory Manager and the Production Management Specialist, the report then becomes the Work Source Objective, or DO 73.Z11.

By a comparison of the manhour requirements for each item, the mission essential code assigned, and the Planned Labor Capability from the Z11, the applied work and unapplied work is determined. Should an applied item be removed from the workload negotiation, then an unapplied item fills the gap based on prioritization established earlier through the use of mission essential codes.

Should an item be under repair for the first time, a AFLC Form 801 is completed by several personnel who provide the appropriate data for the MISTR Repair Requirements form. The data contained on the MISTR form includes but is not limited to the following: source of repair, estimated labor hours, shop flow days, repair cost by quarter, unit price, weapon system applicability, and quarterly input requirements. It is this document that is then entered into the GO 19C system, the Master MISTR file.

MISTR items come under a special concept called "Differential Management." The MISTR items are grouped into two different management categories based on percent of the item population and resources consumed in repair or manufacture. The first management category is the Planned Program Management (PPM) category where high volume items take up 20% of the item population, yet consume 80% of the organic resources. The criteria for PPM qualification is an annual unit repair requirement of thirteen items or more

or a total annual repair cost of $50,000 or more. The second category is composed of those items that are low volume, low cost, using only 20% of the organic resources and occupying 80% of the item population. These are the Controlled Program Management items (CPM).

The Requirements System can then be summarized by saying that four sub-systems (ie, DO 39, DO 41, DO 73, and GO 19C) each gather data in order to determine what the parts, material, and labor requirements are going to be in the future and what type of expectation management can have in planning to meet these forecast requirements. The systems are divided such that two, DO 39 and DO 41 establish the various parts and material requirements and feed this information into the DO 73 system. The DO 73 system then gathers its labor data on the projected labor and maintenance capabilities of the AFLC to develop an integrated plan to meet all projections. The GO 19C system is a special application system where items are categorized by the amount of resources consumed and portion of the total item population occupied. The latter system, GO 19C, is more a management tool for tracking items of high volume and cost and high population proportion than for purposes of establishing any specific requirements.

B. MATERIAL SYSTEMS

Three material systems exist to support the depot level maintenance: The Material Support System (GOO 5M),

the Master Material Support Record System (DO 49), and the Depot Supply Stock Control and Distribution System (DO 33). Of the three, only one of the systems, the Material Support System, has a direct impact for the planner of any particular work order. The Material Support System receives its input and updates from the Master Material Support Record System. It's physically located at the Sacramento AFLC, and maintains the full range of data concerning the items required to repair a unit, down to the various material usage factors. The planner makes a request for a bill of material to the Material Support System and receives a Bill of Material listing not only the materials required for an item repair but also information on the basis for projecting the material requirement, the material supportability, and the material standard cost. Should this information not be in system, the Master or Material Support Systems (DO 49 and GO 05M), the planner must then refer to the technical orders, manuals, parts breakdown lists, and any available engineering drawings to develop an appropriate Bill of Material.

The other two systems, the Master and the Depot Supply Stock Control and Distribution System (DO 49 and GOO 5M), exist mainly support and track the parts status within the Air Force. The systems use the requirements from the planners as the Bill of Material data are called for, the occurrence factor, the number of units per assembly, and the

unit repair requirements to maintain and control the appropriate stock levels in the stock and distribution system. Periodically, the GOO 5M system generates a listing of material shortages and various supportability reports which aid item managers in determining support posture and monitoring of the material acquisition process.

The shop on the floor gains access to the materials and parts required for a job by submitting an AFLC Form 244. This form enters the material support system causing actions to take place which record the transaction, issue an order document, and inform the various management supply and support systems of the withdrawal of an asset. On the form, the necessary information is available to charge the material withdrawal to the appropriate job. The Form 244 also triggers the General and System Support Stock Fund System (HO 42C) to make a bill in order to affect the necessary transfer of funds from the Stock Fund to the Industrial Fund. This process exists to support direct and indirect material and exchangeable items.

In summary, one of the three systems, the DO 49, serves as a historical master file containing all pertinent data concerning material requirements for a particular item. The GOO 5M serves as the direct interface to the planner for information on material requirements for an item or job. The GOO 5M interface also serves to update the master file. The last system, DO 33, serves to keep

track of the demands presented to the other systems and interface with the GOO 5M system to periodically generate listings of items that appear to be in shortage or need of special attention by the Item Manager. The person on the shop floor never really interacts directly with any of the systems, yet depends upon the information accuracy to do his job properly and thus maintain high production levels.

C. PRODUCTION SYSTEMS

The Production System is supported by seven different data collection and accounting systems. In brief, the system that acts as a conduit, sorter, and input for five of the systems is the Remote Data Collection System (GO 14). The production count information is collected and entered from production count cards to the GO 14 system. The GO 14 system then sorts the information into one of five different categories or systems. The last system in the Production side is the Labor Standards system, EO 46B, where the established labor standards are filed. A brief description of each production reporting system follows to enhance the understanding of exactly how the systems interact and produce a management tool.

(1) The Remote Data Collection System, GO 14, starts with a production count card submitted by each RCC supervisor. The information is entered in the RT-16 computer and transferred to tape every

two to four hours for further daily processing by the Remote Data Collection System into one of the five other production systems described below.

(2) The Precision Measurement Calibration, Production, and Certification Data System, GO 41, not only records all production on PME equipment, but also automatically schedules equipment into the laboratory at set intervals for re-calibration and personnel for recertification of critical skills. This system may soon be transferred to another system, the Maintenance Management Information and Control System (MMICS, GO 73).

(3) The Aircraft and Serialized Production Data and Scheduling System, GO 37E, plans, schedules, and controls the modification and repair of aircraft and other serialized work. The system is centered around the PERT network technique. From the system new critical paths are established daily, based on the previous days information.

(4) The GOO 4L system, Other Production Count, reports on those items that do not fall into the GO 37E system, aircraft and serialized workloads. This system reports predominantly on MISTR items.

(5) The Labor Distribution and Cost System, GO 37G, receives input from the Civilian Labor Cost System, HOO 2, and the Military Cost System, HO 69. The

Labor Distribution and Cost System applies an acceleration factor to the labor rates to reflect the government contributed fringe benefits. The hours recorded are actually the exception to the normal duty station assignments. This is to say that assignments to Temporary Duty Assignments, leave, sick leave, and shop steward business are reported to the system and subtracted from the normal work hours one would have at any given work station. An important management tool to come out of this system is the daily labor summary and effectiveness report. This report is seen daily by the Maintenance manager and the shop manager allowing each to evaluate just how effective their unit was the previous day.

In summary, the five systems are used to take the production count from the shops, apply the labor standards (standard hours) established for the jobs reported, and come up with the Standard Direct Product Hours (production count times standard hours) to be processed by the applicable production count system, PME, Aircraft, or Other Production Count System (GOO 41, GO 37E, GOO 4L respectively). This data (standard direct product hours) is then compared with the hours reported by exception in the Labor Distribution and Cost System, GO 37G, to compute the Direct Product Actual Hours. The Direct Product Actual Hours are

divided into the Standard Direct Product Hours to yield the effectiveness ratio reported daily.

The production system can be summarized most readily by saying that "actual" hours spent on any particular item are not recorded, however the average hours spent per item is reported. The system is designed to account for the average hours spent on any particular item by using exception reporting and then use this average hours figure to compare with an engineered standard to arrive at an efficiency or effectiveness ratio,

D. COST SYSTEMS

The cost systems, seven in all, form the last major group of systems used to accumulate, record, and report the costs incurred in depot level maintenance. Only six of the seven systems are actually used by the individual depot in its accounting, the Total Command (meaning the entire Air Force) Depot Maintenance Cost, or HO 36B System being used solely by Air Force Headquarters at Wright Patterson Air Force Base. The six systems used by the individual depot are: (a) Depot Maintenace Budget and Management Cost System, GO 35A, (b) Depot Maintenance Production Cost System, GO 72A, (c) Workload Programming, Planning, and Control System, GO 4C, (d) Maintenance Actual Material Cost System, GO 4H, (e) Project Order Control System, GO 4B, (f) Depot Maintenance and Maintenance

Support Cost Accounting and Production Reporting System, HO 36A. The interaction of the systems are explained briefly.

The Depot Maintenance Budget and Management Cost System, GO 35A, performs several major functions: developing the Operating Cost Based Budget, the basis for establishing the sales rate used throughout the year on costing the production output, and collecting the actual costs to be compared against the budgeted cost at the Resource Control Center (RCC) level. These functions include collecting the actual material cost from the GOO 4H system (Maintenance Actual Material Cost System), the labor cost from the GO 376 system (Maintenance Labor Distribution and Cost System), other direct costs from the GO 72A system (Depot Maintenance Production Cost System), and some overhead costs that are input manually by the individual depot. The costs reported by the Depot Maintenance Budget and Mangement Cost System should equal the total organic expenses included in the Industrial Fund's General Ledger and approximate the expense input of the Work In Process account in the Depot Maintenance Production Cost System.

Specifically, the Operating Cost Based Budget (OCBB), is prepared before the beginning of the fiscal year, by fiscal quarter, and for the entire fiscal year. The three basic expenses developed at the RCC level and input to the

system are direct expense, operations overhead expense, and general and administrative expense. The direct expense includes material, labor, and other direct expense costs such as contractural services. The operations overhead costs are those costs which cannot be economically identified with a specific job order. These allocated costs include indirect labor, material, and other indirect costs incurred by the individual shop. Part of the allocated costs would include such things as scheduling and planning, engineering, and quality control. The general and administrative costs include all other depot maintenance labor outside of the individual product division and other material expenses not classified as direct or operations overhead.

The Operating Cost Based Budget is then mechanically developed in the GO 35A system from the costs input from the RCC level and the Planned Labor Application data compiled by the Resource Management Division. These data inputs then form the basis for the sales rate to be applied during the year for determining the costs to be billed to the customer for production work performed at the depot. It is this sales rate, and thus projected budget, that is adjusted by the Air Force Logistics Command at Wright Patterson to have the Air Force Industrial Fund breakeven. For the Air Force Industrial Fund to breakeven, Sacramento may be required to operate at a "loss" for the year with

its adjusted sales rate figure. The other depots may be operating with adjusted sales rates that would require them to operate at a "profit" giving the Air Force Logistics Command its breakeven revenue. [Ref. 9]

From the approved/adjusted sales rate, an expense rate/price for every conceivable element of cost, both funded and unfunded, is developed for future pricing purposes. These rates are accumulated in the GOO 4C system, Work Load and Program Control System. And yet another output of the GO 35A system are various reports that compare the budgeted cost at the RCC level to the actual costs.

The OCBB is the first function of the GO 35A system with the second function being collection of actual costs. Actual costs are collected through mechanical interfaces to the other data systems. The material costs come from the GOO 4H system, labor costs from the GO 37G system, and other direct costs from the GO 72A system. These costs are then segregated into direct and overhead costs, with the overhead being distributed to the applicable supported RCC and the applicable job order. The results from both the direct and overhead distribution by RCC and job order are then sent to the GO 72A system in the form of labor, material, overhead for each RCC and or job order.

The Depot Maintenance Production Cost System, GO 72A, is the system that computes the end item sales price.

Without an actual hours accounting system, the labor hours figure used to determine labor cost is the Direct Product Actual Hours computed in the GO 37G system. The actual hours are prorated in two steps to arrive at the actual hours to be used in the cost computation. First, actual hours for an individual RCC are divided by its total earned hours (total hours available for production) yielding an actual hour distribution factor. This factor is then multiplied by the job order standard direct product hours (from the EO 46B system) to give the applied actual hours for an individual job order. Individual job actual dollar costs are prorated in the same fashion.

The material costs are input to the GO 72A system by individual stock number using the GOO 4H system, Maintenance Actual Material Cost System. The operations overhead and the general and administrative costs are prorated to the individual jobs based on the standard direct product hours received from the GOO 4L system (Job Order Production Master System). These operations, administrative and maintenance costs are accumulated in the GO 35A system. The other direct costs that may be associated with a job, TDY and/or contract services, will be input manually through the KA 16 system.

Thus, the GO 72A system collects the individual job order labor, material, and G & A costs from the following "holding/accumulating" systems, GO 37G, and GOO 4H, and

the GO 35A systems respectively, to develop the end item "actual" cost. At the same time the system collects labor, material, and G & A expense data from the RCC's to come up with the end item sales price (adjusted by Air Force Headquarters) that was based on the Planned Labor Application data. Therefore, the GO 72A, shows the end item sales price equal to the end item cost.

The Project Order Control System, GOO 4B, is used to assure an adequate inflow of cash to the Industrial Fund through Progress billing and serves to output various funding status reports used by management. The Progress billing is a monthly process to offset the expenses incurred until the final sale is made. On serialized work loads and aircraft, billing is on the basis of earned hours. The various reports output by the system are used by management to identify overruns, deficits, and keep the customer aware of the costs incurred.

The HO 36A system aggregates the total costs incurred for an end item at the end item or serial number level. The primary input is from the GO 72A system, with inputs from the HO 73, Weapon System Support Cost System, and the GO 72D, Contract Cost Data System as applicable.

E. OTHER SYSTEMS

Ten other data and reporting systems interface with the previously mentioned systems. The other systems are of an

auxiliary nature and serve management as information systems and are not of primary importance to the cost accounting, accumulating, and reporting effort. These other ten systems are listed in Appendix F.

F. SUMMARY

The cost reporting, accumulating, and reporting entails 31 different systems broken down into four major categories: Requirements, Material, Production, Cost and Other. A brief review of the major systems is presented.

The Requirements System can be divided into two groupings. The one group, DO 39 (Equipment Item Requirements Computation System) and DO 41 (Recoverable-Consumption Item Requirement System) establish the various parts and material requirements and input this information into the DO 73 or Repair Requirement Computation System. The other group has special applications. The DO 73 uses information from the two previous systems and information concerning labor capabilities and capacities to develop an integrated projection to meet all forecast requirements. The GO 19C (MISR Requirements, Scheduling and Analysis Sytem), using information from the DO 73 system, is designed to manage items that are categorized by the amount of resources consumed and portion of the total item population occup ed.

The Material System can be characterized as having one historical system, one interface system, and one management

system. The historical system, DO 49 or Master Material Support Record System contains all pertinent data concerning material requirements for any particular item. The GOO 5M system or Depot Maintenance Material Support System acts as an interface between the job planner and the Master Material Support System and updates the Master System as required. The DO 33 System or Depot Supply Stock Control and Distribution System is used by management to track the demands for material through the other systems and periodically generate listings of items that appear to need special attention by an Item Manager.

The Production System can be broken down into three basic groups: Collection System and subsystems, Standards, and Quality Assurance. The collection system of major importance, the Remote Data Collection System, (GO 14) acts as the focal point of data accumulation and sorting for five other systems: (a) Precision measurement calibration, production and certification data, GO 41, (b) Aircraft and serialized production data and scheduling information, GO 37E, (c) Other production count, GO 4L, (d) Labor exceptions, GO 37G, and (e) Quality Assurance Data, GO 56. The data is collected and sorted and labor standards applied from the Labor Standards Mechanization System, EO 46B to compute the Standard Direct Product Hour (SDPH). The SPDH is then compared with the hours reported by exception in the Labor Distribution and Cost System, GO 37, to compute

the Direct Product Actual Hours and the effectiveness ratio for each RCC. The Quality Assurance System receives inputs from the Remote Data Collection System and the Other Production Count System.

Production is measured in average hours spent on an item by using exception reporting and engineered standards. The average hours are compared with the engineered standards to arrive at an efficiency or effectiveness ratio. In actuality, the actual labor hours spent on any particular item are an average despite being called Direct Product Actual Hours.

The Costs System can be represented by a budgeting and actual cost system, an end item pricing and costing system, an accumulation system, and a management system. The GO 35A, Depot Maintenance Budget and Management Cost System uses information from the other systems to develop an operating budget for upcoming budget years and establish a sales rate for RCC expense rate. The GO 35A also collects the actual costs incurred during the year to output reports for comparison of budgeted vs. actual costs by RCC. The GO 72A, Depot Maintenance Production Cost System, uses information from the other systems: GO 5M (Material), EO 46B (Standards), GO 4L (Production Count), and GOO 4C (Expense rate) to arrive at an end item sales price on the one hand and information from the actual costing systems: GO 4L (Production Count), GO 37G (Labor Costs), GOO 4H

(Material), and GO 35A (G & A and Overhead) to arrive at the actual end item cost on the other hand.

The accumulation system, the GOO 4C, Work Load and Program Control System converts the RCC rates to work load pricing rates for most every conceivable element of cost.

The management systems are the HO 36A and 36B, Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting System ALC and Headquarters AFLC respectively.

IV. OBSERVATIONS ON REPORT 1397

This section addresses two issues. First, how data gets to OASD from the Sacramento AFLC. Second, how the 1397 Report might best be used to aggregate the data to address the objectives stated in the DOD 7220.29 instruction.

A. HOW OASD RECEIVES THE DATA FROM THE AIR FORCE

Using the cost accumulation systems described in Chapter III, the data, in the form of HO 36A (Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting System-ALC) report, is compiled by AFLC Sacramento and sent to the Air Force Logistics Command, Wright-Patterson Air Force Base, Ohio. The data are sent to HQ AFLC via electronic means from a tape. The transmission process includes no known means of data/error checking to insure that all information as reported by Sacramento is received in its entirety by Headquarters AFLC. Before the HO 36A (Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting System-ALC) leaves Sacramento however, five reports are generated to check for problems such as; a missing inventory price or for errors in the field, owner/ operator. The Headquarters receives the HO 36A report from the depots prior to the end of the fiscal year and

consolidates the data into the HO 36B (Depot Maintenance and Maintenance Support Cost Accounting and Production Reporting System-HQ ALC) report. One of the efforts of the consolidation is to ensure that the HO 36B is programmed to provide an average unit repair cost. The HO 36B report is sent on magnetic tape to the Office of the Secretary of Defense (Comptroller) by 31 January of each year. [Ref. 10, 11]

B. A REVIEW OF THE 1397 REPORT

The following three objectives of the DOD 7220.29H instruction included in Appendix H were selected in order to focus the research in the 1397 report: (a) Compare unit cost incurred with the alternate of replacement cost; (b) Compare cost among organic depots or between organic and contract sources; and (c) Compare depot maintenance and maintenance support activities for efficient use of resources, and identify marginally efficient maintenance activities. These objectives were chosen as they appear to be those in which an outside party, such as Congress, might be most likely to have an interest in. The focus of the remaining objectives in the 7220.29 appear to be along the lines of objectives for local depot managers.

The 1397 report format was reviewed to determine which table(s) would best address the chosen objectives. A listing of the tables presented in the 1397 report is

included in Appendix H. Table 14 was selected as the most likely source of readily available and useful information. Due to the format, the data seem to allow a comparison of the cost of maintenance, repair, overhaul, and manufacture between varying depots and/or contractors. The presentation of the column "Maintenance Cost/Unit" would seem to allow a valid comparison of the efficiency of the various depots, or some measure of their efficient resource allocation. No other table is formatted in a manner which appears to address the objectives so precisely. [Ref. 12]

The depot at Ogden, Utah was selected to compare with the Sacramento depot primarily due to their proximity to the Naval Postgraduate School. A review of Tables 4 and 6 data from the 1397 report show similarities between the depots which further support this choice. Items that would tend to support valid comparability are as follows:

(1) Total cost or business of Sacramento is within 1.6% of Ogden.

(2) Funded cost of Sacramento is within 8.6% of Ogden.

(3) Labor hours of Sacramento are within 5.6% of Ogden.

(4) Direct labor cost of Sacramento is within 11.4% of Ogden despite a 6.2% variance in labor cost/hour.

(5) Maintenance support cost of Sacramento is 1.8% below that of Ogden.

(6) Product indirect cost is within a .4% variance.

(7) G & A cost between the two is within a 3.6% variance.

Items that would tend not to support comparability, yet if accounted for in final analysis or decision making, would not be detrimental are as follows:

(1) Direct Material Cost of Sacramento is 29.5% higher than Ogden.

(2) Other Direct Cost of Sacramento is 49.7% higher than Ogden.

Table 1 represents data that are relevant to the observations that follow. The difference column in Table 1 identifies the similarities and differences relating to the Selected Records which are discussed and reviewed. The notes at the bottom of the table are also important to keep in mind when looking at Table 14 data or the Selected Record data.

C. TABLE 14 AND SELECTED RECORDS

In the researching of Table 14 data, the records ultimately chosen for a closer review were selected based on the following: (a) Items having the greatest difference in unit cost between Sacramento and Ogden thereby possibly comparing efficiencies, (b) Items that had relatively similar quantities being worked so as to minimize the impact of economies of scale and enhance the validity of any comparisons, and (c) Items which might be most easily segregated and identified as to the specific costs that

Table 1

Comparative Data for Sacramento and Ogden

1983 Data	Sacramento	Ogden	% Diff
Total Cost	366,763,000	360,536,000	1.6
Percent Funded	97.22	88.85	8.6
Labor Hours	7,593,000	7,162,000	5.6
Direct Labor Cost	116,194,000	102,918,000	11.4
Civ Labor Cost/Hr.	15.32[1]	14.37	6.2
Direct Material Cost	215,716,000	152,061,000	29.5
Mat. Cost/L. Hr.	28.41	21.23	25.2
Other Dir. Cost	6,708,000	3,369,000	49.7
Maint Support Cost	37,144,000	37,821,000	1.8
Prod. Ind. Cost	98,779,000	99,110,000	0.4
Prod. Ind. Cost/L. Hr.	13.01[2]	13.84[3]	6.0
G & A Cost	54,695,000	56,734,000	3.6
G & A Cost/L. Hr.	7.20[2]	7.92	9.0
Mat. to L. Ratio	1.86	1.48	20.0
Prod. Ind. to L. Ratio	.85[2]	.96	11.4
G & A to L. Ratio	.47[2]	.55	14.5

Notes:

[1]Based on San Francisco area wages. The highest of all ALC's

[2]The lowest rate of all ALC's

[3]The highest of all ALC's

went into that particular item number (items with only four digits represent major groupings of items and specific identifiable cost are difficult to segregate). Realizing that the items selected had already met one criteria--the Table 14 inclusion criteria, total cost times product quantity equals $50,000 or more--the items chosen are only used to illustrate areas of consideration and not to imply that they represent a valid audit procedure which could be extended to the entire population.

D. GENERAL REVIEW OF TABLE 14 CONTENTS

In a general review of Table 14 data, before particular attention was directed to Sacramento or Ogden Depots, some general observations were made. The observations relate to recommendations for additional analysis in the last chapter.

(1) For 1983, 44,422 selected records meet the Table 14 criteria for reporting, (total cost times quantity is greater than $50,000), with two or more depots reporting depot level work on the item. This figure is important later when it is difficult to find two or more depots, to compare cost figures with, reporting on the same item.

(2) The 44,422 records represent approximately 1900 separate items, of which only 380 items (13 digit ID number items) or 20% of the total item population

were worked at two or more depots. Of those 380, only 16 or 4.2% were worked at both Sacramento and Ogden. (It should be remembered that this low figure of dual depot work is in keeping with the Air Force policy of having each depot responsible for specific items.)

(3) Items 1560008845840 through 1560008978397 (14 in all) though separate and individual, show the same quantity for each of the 14 separate items, worked at Oklahoma AFLC. It could be that these are separate components of a common larger item? (i.e., 14 "attachment devices," each having one nut and one bolt). The point being, that the cost/unit difference, may be the item difference in cost/unit (nut or bolt), but not the true cumulative difference (attachment device) for all items that make up the larger composite item. This individual item cost/unit would fail to indicate the true cost/"composite" unit (attachment device) and thus fail to indicate any possible cost efficiency at the depot for the composite unit unless the data is aggregated in a different fashion. At the same time, the present breakdown by component item may more realistically indicate an efficiency at one depot vice another for the same individual item. Can we determine which of

the latter two forms is the best to use. Does the form really allow a valid conclusion to be drawn from the information presented?

(4) Items 1680010366393 through 1680010366398 (6 items) show a constant cost/unit of $699 for each of the 6 items overhauled at the Oklahoma AFLC. The same items worked at the San Antonio AFLC reflect varying cost/unit. Does this information reflect the actual costs incurred, poor management control on costs, poor error checking in transmission of data, or is the data valid and indicative of true efficiencies that should be incorporated at one depot or the other? Does this data merely reflect a difference in the sales price rate that the depots charge a customer? Can this data be relied upon by OASD to make any of the decisions required to be made based on Table 14 data? Does it reflect a valid conclusion that one might make based on the stated objectives of the 7220.29 instruction and thus the 1397 report?

(5) Items 6605010408577 through 6605010470163 and 6605010557466 show that Newark AFS And Litton Systems Inc. worked the same item with the cost/unit varying from 1.3 times to 21.4 times more for Litton to repair the item than Newark. This variance occurred while the quantities concerned remain within the range of 5.6% to 26.9% of each other. Is there a

difference in the method of costing an item between a private contractor and the Air Force? Can the difference be explained by a difference in labor, material, G & A costs or overhead application methods? Was part of the cost a premium in order to have the item repaired on a rush or "short fuse" basis? Was the government charged a fair/unfair rate or does the government not really recognize all the costs associated with the repair or manufacturing of an item?

(6) Items repaired by Oklahoma AFLC and Chromalloy American Co. reflect the exact same cost/unit though the quantities vary from almost the same to twenty-six times the other. The questions to be answered here certainly include but are not limited to those addressed in item 5 above.

(7) Item 4720004800073 was repaired at four depots, including Sacramento and Ogden, with the cost/unit ranging from a low of $9.00 to $65.00. The questions to be answered regarding this item are looked at more closely with respect to Sacramento and Ogden later in this chapter.

E. COMPARISON OF TABLE 14 CONTENTS FOR SACRAMENTO AND OGDEN

Over twenty selected records were extracted from the 1983 data base for review. Sixteen were chosen for close

review, six not deemed worthy of further attention due to the five digit code assigned (aggregate group code, specific item costs not separable or identifiable). Nine of the sixteen remaining 13 digit identification coded items were worked at both Sacramento and Ogden depots. They were extracted for a closer review of exactly what went into the aggregated data presented in Table 14. Only four of the nine selected records chosen indicated repair data each year from 1979 through 1983. This last factor was investigated in order to establish a time series trend analysis or at least verify the inflation factor that might have been applied or the changes in labor and other rates.

Resources permitted an intensive analysis of only those observations with direct connection to Sacramento and Ogden. What are the objectives and can Sacramento and Ogden be evaluated on meeting the objectives based on the data in Table 14? Does the information exist in another form that would allow a better and more thorough evaluation of the degree of achievement of any of the objectives? Initially, the idea was to select items from Table 14 and to determine through Selected Record data on those items, what degree of consistency exists, and to what extent does Table 14 data present the information to allow the 1397 objectives to be met and valid assumptions and decisions to be made based on the data presented?

Based on the foregoing information and the availability of Sacramento's actual planning sheets, item 4720004800073, flexible hose and tube, was selected. The item was worked at four different depots with the cost per unit ranging from $9.00 to $65.00. The number of units worked ranged from 3 to 49. Table 2 provides the data for 1983 in a table format.

The next ten items may reveal little when taken separately however, they definitely raise serious questions with respect to the "implicit intent" of the Table 14 data. Items that appear to be inconsistent and warrant additional analysis to ensure that a valid comparison is made as to the efficiency of the depots are as follows:

(1) The inventory price reported by each depot varies from a low of $12 to a high of $56. Inventory price is supposed to be stabilized throughout the Air Force and extracted from the GOO 4H Material Cost System.

(2) Ogden is the only depot to report any funded direct material cost even though one of the goals for the 7220.29's is to have reporting consistency. Did Sacramento not have any funded cost or omit this for some reason?

(3) Warner Robins reported no unfunded operations overhead. Was all the overhead funded overhead?

Table 2

1983 Selected Records

Flexible Tube and Hose Manufacturing

Facility	Sacramento	Ogden	Warner Robins	San Antonio
Inventory Price	23	12	56	22
Dir. Civ. Labor Prod. Cost	384	106	66	35
Dir. Civ. Labor Prod. Hrs.	24	8	4	3
Dir. Mat'l Cost Funded	0	48	0	0
Operations Ovhd Cost Funded	866	125	68	37
Operations Ovhd Cost Unfunded	3	16	0	2
G & A Expense Funded	121	63	35	36
G & A Expense Unfunded	46	14	8	6
Total Cost	1444.00	372.00	177.00	116.00
(Per Table 14)	1398.00	369.00	196.00	135.00
Total Production Quantity Completed	49	38	3	4
Hours Per Unit	.489	.211	1.3	.75
Cost/Unit	29.47	9.79	59.00	29.00
(Per Table 14)	28.00	9.00	65.00	33.00

Note: On only two records of nine, during a five year period was the Field "Work Days in Process" used ('79 by Ogden and '83 by Sacramento).

(4) Sacramento's application of funded overhead is 2.26 times the direct labor cost whereas the other depots have an almost one to one ratio. From Table 1, Sacramento had the lowest G & A cost to labor ratio of ALL AFLC's. If Sacramento is the lowest, what cost efficient measures are the other depots taking in this area that Sacramento might benefit from?

(5) Ogden's unfunded overhead exceeds the other depots from five to sixteen times as much. Why is there that much variance in overhead application from depot to depot for the same item?

(6) Though the quantities are nearly the same, the hours per unit for Sacramento are 2.3 times the hours for Ogden.

(7) The cost/unit figure is larger on the part of Sacramento. This may be due to the greater time spent per unit, thus the increased labor cost and the greater overhead application. A review of the work sheets for this particular item from Sacramento reveals that the standard hours allowed by the planner for this job is 1.95 for two of five units and 2.3 for the other three. These work orders were written by the same planner, on the same day, for the same job specification. (Appendix I and J)

(8) The difference between the cost figures from the selected records and the Table 14 data suggests that some

possible transformation takes place in the aggregation of data for Table 14. The HO 36B is programmed to calculate the average unit repair cost from the data submitted by the local depots on the HO 36A report.

(9) If Ogden is the lead depot, why is Sacramento doing so much business for this item, especially if Ogden is less expensive?

(10) Only two records of nine showed the field "Work Days in Process" used during the five year period.

Table 3 shows the data from the selected records of Ogden AFLC for the five year period from 1979 to 1983. Five items and data that appears inconsistent and suggest a more in depth review before making comparability and efficiency decisions are as follows:

(1) The inventory price increases each year starting in 1979 50%, 50%, 22%, 8.3% respectively. Possible explanations are the inflation factor for the year created this increase or was the material just not used in the early years and thus reflects purchase prices that are not current and more recent years reflect the recent or current price.

(2) No direct material cost were recorded in 1981 (only two units were manufactured). Does this indicate that the material was scrap/spare and had already been expensed or was there a material recording error?

Table 3

1979-83 Selected Records

Flexible Tube and Hose Manufacturing

	79	80	81	82	83
Inventory Price	4.00	6.00	9.00	11.00	12.00
Dir. Civ. Labor Prod. Cost	82.00	87.00	8.00	38.00	106.00
Dir. Civ. Labor Prod. Hrs.	8	8	1	3	8
Dir. Mat'l Cost Funded	20	14	0	22	48
Ops. Ovhd Cost Funded	75	97	9	40	125
Ops. Ovhd Cost Unfunded	1	11	1	8	16
G & A Expense Funded	32	41	3	29	63
G & A Expense Unfunded	0	6	1	8	14
Total Cost	210.00	256.00	22.00	131.00	372.00
Total Prod. Qty Completed	45	42	2	16	38
Hours/Unit	.1778	.1904	.5	.1875	.211
Cost/Unit	$4.67	6.09	11.00	8.18	9.97

(3) In both 1979 and 1981, operations overhead cost was recorded as $1.00 despite the fact that units manufactured varied (45 vs. 2 respectively). Is this indicative of a possible error in recording of actual cost through the labor hours exception reporting, product count, and standards?

(4) The hours per unit remains in a relatively narrow range of .1778 to .211 with the exception of .5 for 1981. Can this be fully explained by the extremely low number of units manufactured (two) and the resultant loss in economies of scale?

(5) The cost/unit vs. replacement cost was 11.8% over replacement cost from '79 to '81 and under by 21.45% for the last two years. Is this a reflection of the change in sales rate that Ogden was directed to use in order to have a zero profit/loss over the years? Would this also be reflected in the OCBB and in the GOO 4C, Work Load and Program Control System?

The inconsistencies mentioned above draw serious questions as to whether or not the data as aggregated and presented in Table 14 can be used to make decisions based on the objectives stated in the DOD Cost Accounting Guide and selected for this research specifically. The observations and presentation of data in this chapter are discussed and recommendations made in chapter five. The making of valid decisions from the 1397 report as presently

configured appears to be questionable at best yet valid data are available and can be used. Chapter V addresses specific areas for enhanced presentation of data.

V. CONCLUSIONS AND RECOMMENDATIONS

This final chapter presents conclusions, recommendations, and areas for further study of the systems that might provide a better product for OASD and those that would use the 7220.29 report.

A. GENERAL DISCUSSION

Before the specific conclusions and recommendations are presented, several general points should be raised.

(1) Is the 1397 report a tool for military management as stated in the 7220.29 instruction or is it a tool for the analyst?

(2) Should we accept a level of "inefficiency" to maintain an industrial base to support the military establishment in time of national defense?

(3) In reviewing data, what quantity difference do we find acceptable for comparison purposes?

(4) In reviewing data, do we consider the nature or circumstances (i.e. the aircraft must be in the air for a mission in twenty-four hours, the ship must sail by 0800) surrounding the depot level job order? What price do we put on the mission essential/critical repair?

(5) How do we value a mission essential repair today versus a replacement part available in two days? How do we report this cost in the 1397?

(6) Do we really need to annotate this report (the 1397), in order to answer the questions of the analyst?

(7) How do we address the myriad of factors that can go into any accounting system which make any comparison of data between systems very difficult; for instance plant capabilities, plant lay out, skill levels, set up times, etc.?

The preceding questions must be answered by the party responsible for the 7220.29 instruction and the associated users before any truly fruitful progress can be made.

B. CONCLUSIONS

In a very strict sense, the three objectives selected from the 7220.29 for emphasis in this research:

(1) Compare unit cost incurred with the alternate of replacement cost.

(2) Compare cost among organic depots or between organic and contract sources.

(3) Evaluate depot maintenance and maintenance support activities for efficient use of resources, and

identify marginally efficient maintenance activities, are being met.

Webster's Collegiate Dictionary defines compare "to represent as similar, to examine the character or qualities of especially in order to discover resemblances or differences." Although the data are comparable if the individual using it is knowledgeable about how it was aggregated (for instance, depot managers) the data are not comparable for use by an analyst who is not familiar with the data collection system. However the analyst might think that the data could be used to address questions of fraud, waste, and abuse because of the stated purpose of the 7220.29 instruction, its implications, and the Table 14 format. The following thirteen conclusions are presented and based upon the assumption that the data may be used by those who do not completely understand the data before them. To help the reader, the conclusions/findings are presented in the following format:

-- the conclusion/finding
-- the area in Chapter IV that presents supporting or conflicting data.

(1) No means exists to flag or note a change in sales rate, held in the GOO 4C system (Work Load and Program Control System), from year to year.

(2) No other table in the 1397 report is formatted in any manner that allows "evaluation" of the chosen objectives so precisely and easily.

(3) Except for the Selected Records, no table exists to measure or compare "standard costs." Even the selected record data fails to reveal a "standard cost." An inventory cost exists, but is that the standard when engineered standards are available?

(4) Can a valid comparison between depots repairing the same item be made if it is Air Force policy to have item managers or specific depots specialize in the repair of an item? This policy is in itself a response to Congress and an effort to economize and improve efficiency throughout the Air Force by centralizing work efforts. (4.D.1 and 4.D.2)

(5) No notation exists to indicate that the total cost of breakdown, transportation, and reassembly of the individual elements of some composite item is greater than a single depot being inefficient with regard to some of the parts? (4.D.3)

(6) No error checking program or special notation signifying that management has reviewed the existing data is installed to prevent data such as that represented by items 1680010366393 through 1680010366398 (i.e. constant price/unit though the quantity varies) (4.D.4)

(7) No specific management control exists to inform personnel reviewing the 1397 that when a difference between government and contractor price varies by more than X% special attention should be given to that item to ensure the extra price was considered for that particular instance (e.g. military training, military criticality, mission degradation) (4.D.5 and 4.D.6)

(8) No means exists to ensure that four separate depots report the same inventory price. (4.E.1)

(9) No check exists to ensure all appropriate data is entered or annotated as required. (4.E.2 and 4.E.3)

(10) No means exists to qualify the hours spent/unit when the variance from a standard is high. (4.E.6)

(11) No means exists to error-check the aggregation of data from the selected records to the Table 14 format. (4.E.8)

(12) Some error checking may be so rigid that figures are entered just to have the data accepted, vice having the data right. (4.E.3)

(13) No notation exists to indicate that some changes in price can be attributed directly to the required sales price adjustment set down by higher authority. (4.E.5)

C. RECOMMENDATIONS

Before any of the following recommendations may be implemented, those responsible for the 7220.29 should specifically identify what they expect from the data and the various table formats. It would be just as dangerous to implement the following recommendations without a careful review of the goals or objectives of the data collection effort as it would be to carry out the recommendations based on the present findings. The recommendations to follow are aimed at allowing the data that are available to special interest groups, such as Congress, to be reviewed properly and have valid conclusions drawn based on the data.

(1) Based on the conclusions drawn and supporting documentation in paragraphs 5.B.2, 3, 4, 5, 7, and 13 above, it is recommended to change the stated objectives in the 7220.29 to indicate that the data is collected in a consistent fashion. To fully understand the meaning of the data, the instruction should explicitly state that before any comparisons or efficiency evaluations are made, a more detailed look at Selected Records is required.

(2) Based on the conclusions drawn and supporting documentation presented in paragraphs 5.B.1, 5, and 13 above, it is recommended that some degree of

explanation on how the data in a table were aggregated and when a greater review of other data will complement and enhance the decision process.

(3) Based on the conclusion drawn and supporting documentation presented in paragraphs 5.B.9, 11, and 12 above, it is recommended that an error checking program be developed to ensure that data transmitted from the depot to Headquarters are an exact duplicate of the original data.

(4) Based on the conclusions drawn and supporting documentation presented in paragraph 5.B.8, it is recommended to develop an error checking program to catch such differences as inventory prices between depots and require an explanation or notation for such differences.

(5) Based on the conclusions drawn and supporting documentation presented in paragraph 5.B.2, it is recommended to eliminate the column in Table 14 "cost/unit" unless specific note is made regarding the characteristic of the data. The instruction should state that before valid comparisons with data from other facilities is made, a careful analysis of input data and facility characteristics is required.

D. QUESTIONS FOR ADDITIONAL RESEARCH

The answers to the following questions may aid the users of the 1397 report data in their decision making.

(1) Have the objectives of the 7220.29-H instruction changed and if they have, what are the new objectives?

(2) What data are needed and how should the data be formatted?

(3) What is the best way to indicate the influence of the changing sales rate on unit costs?

(4) Do private contractors cost differently than the depot?

(5) How can mission essential repairs be indicated in the 1397 report?

E. SUMMARY

Does the 7220.29 report meet its objectives and provide the data decision makers need? As discussed earlier, the myriad of factors that go into any accounting system must be adequately addressed. Such things as: the various plant capabilities, the depreciation schedules, equipment age and sophistication, plant layout, and various available skill levels all reflect areas of impact on comparing any two organizations with respect to efficiency and effectiveness. Strictly speaking, the 1397 meets the objectives. On the other hand, if the report is more broadly reviewed, the adequacy of the present system leaves much open to question and interpretation.

This study is an attempt to discover the extent to which various depots use uniform cost accounting procedures

and provide valid data to OASD. While there may be some problems at the depot level of data accumulation, they are of minor consequence. The major area of concern appears to be in the presentation and subsequent interpretation of the formatted data. The data may be misleading and open to misinterpretation by an unknowledgeable user. A better format for data or a caveat/explanation is required to assist the user of the present format.

LABOR SUMMARY AND EFFECTIVENESS REPORT

ACFCM (2) MAN (2) MAW (1) LABOR SUMMARY AND EFFECTIVENESS REPORT Daily & Formal DATE 12-30-83 A-00370-FD1-D2-MFD PG 418

RCC: MAN

DUTY CODE	SKILL CODE	SPEC PROJ	INDIRECT BUDGET	FACTOR ACTUAL	CURRENT DAY ACTUAL HOURS REGULAR	OVERTIME	HOLIDAY	TOTAL	MONTH TO DATE ACTUAL HOURS REGULAR	OVERTIME	HOLIDAY	TOTAL	EARNED HOURS	% EFF
11					2175.5	93.0		2268.5	138571.4	3856.8		142428.2	141355.2	99
DUTY CODE TOTALS					2175.5	93.0		2268.5	138571.4	3856.8		142428.2	141355.2	99
NON CLSS									43.0			43.0		
MILITARY TOTALS									43.0			43.0		
12									56.0			56.0	588.0	999
DUTY CODE TOTALS									56.0			56.0	588.0	999
CLASS SUB TOTALS					2175.5	93.0		2268.5	138627.4	3856.8		142484.2	141943.2	100
NON CLSS									43.0			43.0		
MILITARY TOTALS									43.0			43.0		
14									1299.0			1299.0	1254.0	97
DUTY CODE TOTALS									1299.0			1299.0	1254.0	97
DIRECT TOTALS					2175.5	93.0		2268.5	139926.4	3856.8		143783.2	143197.2	100
NON CLSS									43.0			43.0		
MILITARY TOTALS									43.0			43.0		
21					324.0	8.0		330.0	14339.0	310.5		14649.5	11311.9	77
22					169.0			169.0	4462.8	49.6		4512.4	1660.2	37
23					823.0	18.0		841.0	28175.7	312.4		28488.1		
24									247.0			247.0	1215.8	492
26					133.0	3.1		136.1	4423.0	50.1		4473.1	5851.9	128
27					129.0	8.0-		121.0	5415.8	147.0		5562.8	7415.2	133
29									113.3			113.3	225.8	199
INDIRECT TOTALS					1578.0	19.1		1597.1	57178.4	869.8		58048.2	27480.8	47
NON CLSS					8.0			8.0	168.0			168.0		
MILITARY TOTALS					8.0			8.0	168.0			168.0		
31					7125.0			7125.0	38298.2			38298.2	40353.2	111
32					309.0			309.0	8085.0			8085.0	7570.3	94
33					66.0			66.0	12681.0			12681.0	10958.3	86
34									1.0-			1.0-		
CIV LEAVE TOTALS					7500.0			7500.0	57061.2			57061.2	58881.8	103
35									8.0			8.0	147.8	999
36													61.2	
37													323.5	
NON-CLSS									8.0			8.0		
MIL LEAVE TOTALS									8.0			8.0	532.5	999
DIV LEAVE TOTALS					7500.0			7500.0	57069.2			57069.2	59414.3	104
DIV TOTALS					11253.5	112.1		11365.6	254172.0	4726.8		258898.8	230092.1	89
NON CLSS					8.0			8.0	219.0			219.0		
MILITARY TOTALS					8.0			8.0	219.0			219.0		
MEMO ENTRIES														
38									24.0			24.0		
39					594.5			594.5	4320.0			4320.0		
43									9.0			9.0		
SPECIAL PROJECTS														
11		13			443.0			443.0	18383.0			18383.0		
11		52							57.0			57.0		
11		71							16.0			16.0		
26		14							1.0			1.0		
33		13							928.0			928.0		

ACFC (08) RCC OPERATING COST REPORT PERFORMING FUNDED A-G035A-HF3-MM-MBV

SMALC MONTHLY FUNDED PROCESS DATE 06 JAN 1984 AS OF 31 DEC 1983 PAGE 213

RCC MN	BUDGET DPSH/COSTS	ACTUAL DPAH/COSTS	FLEX/BUD DPEH/COSTS	BUDGET RATE	ACTUAL RATE	ACT/BUD EXP/VAR	FLEX-BUD/YTD DPEH/COST	BUD YTD DPSH/COST	ACT YTD DPAH/COST
ACTIVITY HOURS	131,620.6	142,441.2	141,958.5				432,264.4	419,009.6	435,957.9
DIRECT LABOR	2,098,144	2,274,334	2,327,025	15.941	16.021	176,190	7,086,144	6,807,961	6,940,850
DIRECT LABOR OTH	0	0	0	.000	.000	0	0	0	0
DIRECT EXP MAT	1,754,709	1,492,260	1,960,743	13.332	10.512	262,449-	6,013,967	5,775,614	5,889,233
OTHER DIR COST	27,493	4,373	23,956	.209	.031	23,120-	76,328	89,871	45,076
TOTAL DIRECT COST	3,880,346	3,770,967	4,311,724	29.481	26.564	109,379-	13,176,439	12,673,446	12,875,159
INDIRECT LABOR	384,675	414,462	428,923	2.923	2.920	29,787	1,286,997	1,247,048	1,298,775
INDRECT MATERIAL	480,505	441,788	540,784	3.651	3.112	38,717-	1,631,291	1,553,066	1,424,505
INDIRECT OTHER	89,385	21,798	96,024	.679	.154	67,587-	320,602	292,608	64,473
SHOP EXPN DEPREC	202,016	169,780	221,486	1.535	1.196	32,236-	668,912	653,849	499,203
TOT SHP EXP OPR O/H	1,156,581	1,047,828	1,287,217	8.787	7.381	108,753-	3,907,802	3,746,571	3,286,956
TOT DIR CST/SHP EXP	5,036,927	4,818,795	5,598,941	38.269	33.945	218,132-	17,084,241	16,420,017	16,162,115
SECTION DIRECTION	23,762	18,949	26,240	.181	.133	4,813-	79,955	77,082	86,287
ENG PLANNING	211,109	207,534	244,078	1.604	1.462	3,575-	720,768	678,828	652,584
SCHEDULING	236,217	246,984	262,410	1.795	1.740	10,767	797,693	767,735	797,409
QUALITY	86,518	75,701	95,521	.657	.533	10,817-	289,566	279,829	242,633
DIVISION DIRECTION	72,481	204,621	80,230	.551	1.441	132,140	244,448	235,215	816,743
OVHD EXPN DEPREC	33,675	27,526	37,779	.256	.194	6,149-	114,021	108,963	76,408
TOT SHP SUPP EX O/H	663,762	781,315	746,258	5.043	5.504	117,553	2,246,451	2,147,652	2,672,064
GEN ADMIN EXPENSE	1,035,243	1,993,289	1,148,896	7.865	14.041	958,046	3,496,292	3,359,802	3,243,954
TOTAL RCC COST	6,735,932	7,593,399	7,494,095	51.177	53.490	857,467	22,826,984	21,927,471	22,078,133
GO72A ADJ OPER O/H		10,585			.075				
GO72A ADJ G-A EXP		0			.000				

APPENDIX B

RCC OPERATING COST REPORT

A-G072A-P09-PA-MPT END ITEM SALES PRICES - FY 84 PHASE 01 CYCLE 03 SM AS OF 10/01/83 P 416 09/26/8
1204 HOURS

18488GMNPPA SEQUENCE: PROD NR, RCC

PROD NR	RESP PS	S D	END ITEM IDENTITY	PERF RCC	SRC CDE	STANDARD HOURS	LABOR COST	EXPENSE MATL	OTHER DIRECT	OPER OVHD	G & A	EXCHNGE MATL	OTH UNF MATL	TOTAL FUNDED
						PART I - EXCHANGEABLES								
18488G	MNPP	A	6115005945141UH	MNPPA	N	3.21	51	0	0	28	37	0	0	116
			NO LATEST 12 MONTHS AVG NO INDUCTED FY 83						NO INDUCTED BEFORE FY 83					
18490A	MNPP	A	6115006908967UH	MNPEG	P	.50	7	0	0	5	6	0	0	18
				MNPEH	P	.21	3	0	0	2	2	0	0	7
				MNPPA	N	8.56	135	353	0	76	99	0	0	663
				MN	N	8.56	135	353	0	76	99	0	0	663
				MN	P	.71	10	0	0	7	8	0	0	25
				TOTAL		9.27	145	353	0	83	107	0	0	688
			NO LATEST 12 MONTHS AVG NO INDUCTED FY 83						NO INDUCTED BEFORE FY 83					
18491A	MNPP	A	6115006911270UH	MNPEG	P	.50	7	0	0	5	6	0	0	18
				MNPEH	P	.21	3	0	0	2	2	0	0	7
				MNPPA	N	10.33	163	646	0	91	120	0	0	1020
				MN	N	10.33	163	646	0	91	120	0	0	1020
				MN	P	.71	10	0	0	7	8	0	0	25
				TOTAL		11.04	173	646	0	98	128	0	0	1045
	RECENT COST AVERAGES			UNITS										
	LATEST 12 MONTHS			2		11.07	152	0	0	104	86	0	0	342
	INDUCTED FY 83			2		11.07	152	0	0	104	86	0	0	342
			NO INDUCTED BEFORE FY 83											
18494A	MNPP	G	6115009031256BF	MCPRA	N	.28	4	0	0	4	3	0	0	11
				MNPBG	N	1.78	30	0	0	29	21	0	0	80
				MNPBN	N	.47	8	0	0	7	5	0	0	20
				MNPEG	P	.50	7	0	0	5	6	0	0	18
				MNPPG	N	6.76	110	570	0	58	78	0	0	816
				MN	N	9.01	148	570	0	94	104	0	0	916
				MN	P	.50	7	0	0	5	6	0	0	18
				TOTAL		9.51	155	570	0	99	110	0	0	934
				TOTAL	N	9.29	152	570	0	98	107	0	0	927
				TOTAL	P	.50	7	0	0	5	6	0	0	18

18494AMNPPG SEQUENCE: PROD NR, RCC

PROD NR	RESP PS	S D	END ITEM IDENTITY	PERF RCC	SRC CDE	STANDARD HOURS	LABOR COST	EXPENSE MATL	OTHER DIRECT	OPER OVHD	G & A	EXCHNGE MATL	OTH UNF MATL	TOTAL FUNDED
						PART I - EXCHANGEABLES								
18494A	MNPP	G	6115009031256BF	TOTAL		9.79	159	570	0	103	113	0	0	945
RECENT COST AVERAGES				UNITS										
LATEST 12 MONTHS				630		8.87	115	435	0	96	43	0	0	689
INDUCTED FY 83				475		9.40	120	382	0	110	45	0	0	657
INDUCTED BEFORE FY 83				155		7.24	99	597	0	55	35	0	0	786
18494G	MNPP	G	6115009031256BF	MNPPG	N	3.75	61	0	0	22	44	0	0	137
NO LATEST 12 MONTHS AVG NO INDUCTED FY 83								NO INDUCTED BEFORE FY 83						
18495A	MNPP	G	6115009783063BF	MCPRA	N	.30	5	0	0	4	3	0	0	12
				MNPBG	N	.15	3	0	0	2	2	0	0	7
				MNPBN	N	1.00	16	0	0	15	12	0	0	43
				MNPEC	N	[redacted]	9	0	0	10	6	0	0	25
				MNPEG	P	[redacted]	11	0	0	8	9	0	0	28
				MNPEH	P	.21	3	0	0	2	2	0	0	7
				MNPPD	N	.76	12	0	0	8	9	0	0	29
				MNPPG	N	9.25	151	752	0	80	107	0	0	1090
				MN	N	11.66	191	752	0	115	136	0	0	1194
				MN	P	.98	14	0	0	10	11	0	0	35
				TOTAL		12.64	205	752	0	125	147	0	0	1229
				TOTAL	N	11.96	196	752	0	119	139	0	0	1206
				TOTAL	P	.98	14	0	0	10	11	0	0	35
				TOTAL		12.94	210	752	0	129	150	0	0	1241
RECENT COST AVERAGES				UNITS										
LATEST 12 MONTHS				283		11.59	160	836	0	116	61	0	0	1173
INDUCTED FY 83				198		11.66	164	975	0	127	63	0	0	1329
INDUCTED BEFORE FY 83				85		11.42	153	513	0	91	55	0	0	812
18495G	MNPP	G	6115009783063BF	MNPPG	N	3.75	61	0	0	32	44	0	0	137
RECENT COST AVERAGES				UNITS										
LATEST 12 MONTHS				5		3.75	54	0	0	38	16	0	0	108
INDUCTED FY 83				3		3.75	54	0	0	45	17	0	0	116
INDUCTED BEFORE FY 83				2		3.75	53	0	0	27	14	0	0	94
18496A	MNPP	F	6125000218064AH	MNPET	N	1.62	26	0	0	30	19	0	0	75

ACFC (3)

MONTHLY ACTUAL MATERIAL COST RECAP BY COST CODE WITHIN RCC 84/01/31 A-G004H 143 MO MMO PAGE 361

RCC	C C	CNTL NR	GEN SUP STK FUND EXPENSE	SYS SUP STK FUND EXPENSE	INVESTMENT MATERIAL	SERVICEABLE	REPARABLE	CONDEMNED	TOTAL	EXCHANGE COST
M	TOTALS BY COST CODE									
	A		1869211.90	6334261.50	.00	8203473.40	.00	.00	8203473.40	.00
	D		.00	.00	1194299.90	1198904.90	4605.00-	.00	1194299.90	.00
	E		.00	.00	618968.77	[illegible]921795.58	10382744.04-	157420.31-	618968.77-	1795735.63
	J		.00	.00	2750156	[illegible]405151.56	3646202.90	8791.96-	2750156.70	1323918.68
	L	U6100	1433402.99	90949.57	[illegible]	[illegible]24352.56	.00	.00	1524352.56	.00
	L	U6300	279744.51	7767.74	.00	287512.25	.00	.00	287512.25	.00
	L	U6400	34560.56	.00	.00	34560.56	.00	.00	34560.56	.00
	L	U6511	131420.00	.00	.00	131420.00	.00	.00	131420.00	.00
	L	U6512	13833.04	.00	.00	13833.04	.00	.00	13833.04	.00
	L	U6610	56452.43	.00	.00	56452.43	.00	.00	56452.43	.00
	L	U6620	102301.71	259.06	.00	102560.77	.00	.00	102560.77	.00
	L	U6630	40397.70	134.85	.00	40532.55	.00	.00	40532.55	.00
	L	U6700	50428.84	.00	.00	50428.84	.00	.00	50428.84	.00
	L	U6800	1187.97	.00	.00	1187.97	.00	.00	1187.97	.00
	M		.00	.00	2802314.80	4602550.19	1709323.07-	90912.32-	2802314.80	.00
	N		21481.96-	70248.95-	.00	.00	91148.00-	582.91	91730.91-	.00
	R		654078.52	821969.27	.00	1476047.79	.00	.00	1476047.79	.00
	T		.00	.00	.00	.00	.00	.00	.00	.00
	W		8394.05	3089.96	.00	11484.01	.00	.00	11484.01	.00
	X		.00	.00	133764.34	133764.34	.00	.00	133764.34	.00
	X	U6100	.00	.00	89248.70	234355.79	145107.09-	.00	89248.70	.00
	X	U6300	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6400	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6610	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6620	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6630	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6700	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6800	.00	.00	.00	.00	.00	.00	.00	.00
	X	U6812	.00	.00	.00	.00	.00	.00	.00	.00
	Y		.00	.00	.00	1869.00	1869.00-	.00	.00	783.11
	Z		.00	.00	.00	.00	.00	.00	.00	.00
TOTALS			4653932.26	7188183.00	6350815.67	34431637.53	15980999.10-	257707.50	18192930.93	3120437.42

ACFC (3)

MONTHLY ACTUAL MATERIAL COST RECAP BY COST CODE WITHIN RCC 84/01/31 A-GOO4H 143 MO MMD PAGE 362

RCC	C C	CNTL NN	GEN SUP STK FUND EXPENSE	SYS SUP STK FUND EXPENSE	INVESTMENT MATERIAL	SERVICEABLE	REPARABLE	CONDEMNED	TOTAL	EXCHANGE COST
TOTAL L										
			2143729.75	99111.22	.00	2242840.97	.00	.00	2242840.97	.00
TOTAL X WITH U PREFIX TO JON										
			.00	.00	89248.70	234355.79	145107.09-	.00	89248.70	.00
TOTAL DIRECT EXPENSE MATERIAL (COST CODES A & R										
			2523290.42	7156230.77	.00	9679521.19	.00	.00	9679521.19	.00
TOTAL DIRECT EXCHANGE (COST CODES E & J)										
			.00	.00	2131187.93	16326347.14	14028946.94-	166212.27-	2131187.93	3119654.31
TOTAL DIRECT NON-EXCHANGE INVESTMENT MATERIAL (COST CODES D, M, T, Z & X WITHOUT U PREFIX TO JON)										
			.00	.00	4130379.04	5935219.43	1713928.07-	90912.32	4130379.04	.00

RCS: LOG-ACF(M)7118

SACRAMENTO ALC
ANALYSIS OF DMS, AFIF FINANCIAL STATUS
31 DECEMBER 1983

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REGINALD A. MURRAY, Colonel, USAF
Comptroller

SACRAMENTO ALC
DEPOT MAINTENANCE SERVICE, AIR FORCE INDUSTRIAL FUND
COMPARATIVE STATEMENTS OF FINANCIAL CONDITION
(AS OF 30 NOV. AND 31 DEC. 1983)
($ IN THOUSANDS)

ASSETS	30 NOV. 1983 $	31 DEC. 1983 $	NET CHANGE $	NET CHANGE %
ACCOUNTS RECEIVABLE				
ORGANIC CUSTOMERS	4,624	4,250	(374)	-8
CONTRACT CUSTOMERS	10,910	8,288	(2,622)	-24
OTHER	198	221	23	12
TOTAL RECEIVABLES	15,732	12,759	(2,973)	-19
INVENTORIES				
ORGANIC				
PRODUCTION WORK IN PROCESS	77,489	77,675	186	0
LESS PROGRESS PMTS. FROM CUST.	43,552	38,964	(4,588)	-11
SUB-TOTAL	33,937	38,710	4,774	14
MATERIAL ON HAND	18,700	17,389	(1,310)	-7
MATERIAL INTRANSIT	3,918	3,780	(137)	-4
SUB-TOTAL	22,617	21,169	(1,448)	-6
CONTRACT				
PRODUCTION WORK IN PROCESS	119,115	117,945	(1,170)	-1
LESS PROGRESS PMTS. FROM CUST.	115,812	114,081	(1,731)	-1
SUB TOTAL	3,303	3,864	561	17
MATERIAL ON HAND	13,378	14,809	1,431	11
MATERIAL INTRANSIT	5,549	6,034	485	9
SUB-TOTAL	18,927	20,843	1,916	10
TOTAL INVENTORIES	78,784	84,587	5,803	7
OTHER ASSETS	751	1,841	1,090	145
FIXED ASSETS				
FUNDED FACILITIES-LESS DEPRN	0	0	0	0
EQUIPMENT IN USE LESS DEPRN	87,907	90,012	2,105	2
UNFUNDED FACILITIES-LESS DEPRN	30,622	31,676	1,054	3
TOTAL FIXED ASSETS	118,529	121,688	3,159	3
OTHER FIXED ASSETS				
ADP EQMT SYSTEMS LESS AMORT	0	0	0	0
LEASEHOLD IMPROVEMENTS-LESS AMORT	0	0	0	0
TOTAL OTHER ASSETS	0	0	0	0
INTER OFFICE TRANSFERS				
NET CASH TRANSFERS	35,002	35,673	670	2
NET OTHER TRANSFERS	0	0	0	0
NET TRANSFERS	35,002	35,673	670	2
TOTAL ASSETS	248,798	256,548	7,750	3

SACRAMENTO ALC
DEPOT MAINTENANCE SERVICE, AIR FORCE INDUSTRIAL FUND
COMPARATIVE STATEMENTS OF FINANCIAL CONDITION - CONTINUED
(AS OF 30 NOV. AND 31 DEC. 1983)
($ IN THOUSANDS)

LIABILITIES AND CAPITAL	30 NOV. 1983 $	31 DEC. 1983 $	NET CHANGE $	NET CHANGE %
ACCOUNTS PAYABLE				
ORGANIC	5,406	5,776	370	7
CONTRACT	8,979	11,790	2,811	31
TOTAL PAYABLES	14,385	17,566	3,181	22
ACCRUED EXPENSE				
ORGANIC				
CIVILIAN SALARIES AND WAGES	130	6,410	6,280	4828
CIV. LEAVE & PERSONNEL BENEFITS	13,370	6,215	(7,156)	-54
OTHER ACCRUED EXPENSES	1,703	1,942	239	14
ACCURED EXPENSES-MAJOR MAINT	1,792	2,402	611	34
SUB-TOTAL	16,995	16,969	(26)	0
CONTRACT				
CONT. CHARGES & MATERIAL USED	146,353	141,495	(4,858)	-3
TOTAL ACCRUALS	163,348	158,464	(4,884)	-3
CAPITAL				
NET CAPITALIZATION	55,038	58,365	3,327	6
RESERVES FOR EQUIPMENT	0	416	416	100
NON-OPERATING EXPENSES	0	0	0	0
OPERATING RESULTS				
BALANCE, BEGINNING OF PERIOD	16,198	16,198	0	0
PRIOR YEAR ADJUSTMENTS	0	0	0	0
OPERATING RESULTS - ORGANIC	(996)	4,607	5,603	562
OPERATING RESULTS - CONTRACT	826	932	106	13
CUMULATIVE OPERATING RESULTS	16,028	21,737	5,709	36
TOTAL CAPITAL	71,065	80,518	9,453	13
TOTAL LIAB. AND CAPITAL	248,798	256,548	7,750	3

SUPPLEMENTAL DATA
AGEING OF ACCOUNTS RECEIVABLE
31 December 1983
($ IN THOUSANDS)

CATEGORY	TOTAL	AGE FROM INCEPTION 0-30 DAYS	31-60 DAYS	OVER 60 DAYS
ORGANIC	$ 4,250	$ 3,868	$ 78	$ 304
CONTRACT	8,288	8,288	0	0
TOTAL	$12,538	$12,156	$ 78	$ 304

OVER 60 DAYS ($ IN THOUSANDS)

ORGANIC:

CUSTOMER	AMOUNT	DATE OF INCEPTION	REASON UNPAID
FMS	$(11)	Jan 83	Billed; awaiting check from HQ AFLC follow-up current.
FMS	(15)	Aug 83	
FMS	330	Sep 83	
TOTAL	$304		

CONTRACT: None

UNFUNDED ACCOUNTS RECEIVABLE: None

ACCOUNTS RECEIVABLE WRITTEN OFF: None

SACRAMENTO ALC
ANALYSIS OF CUSTOMER ORDERS ACCEPTED
($ IN THOUSANDS)
31 December 1983

	TO BE RECEIVED (The Current Anticipated Customer Program)	CUSTOMERS ORDERS ACCEPTED CY	PY	PERCENT ACCEPTED
	$	$	$	%
ORGANIC	-0-*	108,127	(2,969)	0
ORGANIC DETAIL:				
OC-ALC		21,348		
OO-ALC		8,655		
SA-ALC		10,464		
SM-ALC		65,594		
WR-ALC		2,066		
AGMC		-0-		
TOTAL	$ -0-	$108,127		
CONTRACT	$179,269	$121,931**	$ (9)	68

*Updated figures not provided.
**Contract customer orders are funded prior to contract award as directed by HQ AFLC/MAJ.

SACRAMENTO ALC
DEPOT MAINTENANCE SERVICE, AIR FORCE INDUSTRIAL FUND
STATEMENTS OF REVENUE AND EXPENSE - ORGANIC
FOR THE PERIODS INDICATED
($ IN THOUSANDS)

	MONTH OF DEC. 1983				3 MONTHS ENDED 31 DEC. 1983			
	ACTUAL	BUDGET	VARIANCE		ACTUAL	BUDGET	VARIANCE	
	$	$	$	%	$	$	$	%
REVENUE								
AIRCRAFT REPAIR & MOD.	6,198	6,220	(22)	-0.4	22,338	19,101	3,237	16.9
MISSILE REPAIR & MOD.	0	0	0	0.	0	0	0	0.
ENGINE OVERHAUL	0	0	0	0.	0	0	0	0.
OVHL. EXCHANGE ITEMS	23,539	17,313	6,226	36.0	49,918	42,545	7,373	17.3
OTHER MAJOR END ITEMS	3,080	2,857	223	7.8	10,308	9,296	1,012	10.9
OTHER REVENUE	3,241	2,652	589	22.2	6,247	7,581	(1,314)	-12.3
TOTAL REVENUE	36,059	29,042	7,017	24.2	88,831	78,523	10,308	13.1
LESS PUR RATE FCTR	416	303	113	37.2	416	303	113	37.2
NET REVENUE	35,643	28,739	6,904	24.0	88,415	78,220	10,195	13.0
DIRECT PRODUCTION								
LABOR	8,615	9,065	(450)	-5.0	28,719	26,820	1,899	7.1
MATERIAL	9,847	7,996	1,851	23.2	27,778	23,974	3,804	15.9
OTHER	79	326	(247)	-75.7	773	900	(127)	-14.1
TOTAL DIRECT PROD	18,542	17,387	1,155	6.6	57,270	51,694	5,576	10.8
PRODUCTION OVERHEAD								
LABOR	3,711	4,318	(607)	-14.0	12,631	12,646	(15)	-0.1
MATERIAL	1,928	2,653	(675)	-25.5	5,382	6,603	(1,221)	-18.5
OTHER	(13)	13	(26)	-201.6	98	40	58	145.1
TOTAL PROD OVERHD	5,626	6,984	(1,308)	-18.7	18,110	19,289	(1,179)	-6.1
GEN & ADM OVERHEAD								
LABOR	1,945	1,697	248	14.6	4,734	5,198	(464)	-8.9
MATERIAL	2,862	226	2,636	1166.5	878	(1,825)	2,703	148.1
OTHER	1,200	3,860	(2,660)	-68.9	7,057	11,350	(4,293)	-37.8
TOTAL G&A OVERHD	6,008	5,783	225	3.9	12,670	14,723	(2,053)	-13.9
TOTAL COST & EXP	30,226	30,154	72	0.2	88,050	85,706	2,344	2.7
ADD: BEG BAL WIP	77,489	0	77,489	100.0	73,434	71,225	2,209	3.1
SUB TOTAL	107,715	30,154	77,561	257.2	161,484	156,931	4,553	2.9
LESS: END BAL WIP	77,675	196	77,479	39530.0	77,675	75,295	2,380	3.2
TOTAL COST	30,040	29,958	82	0.3	83,809	81,636	2,173	2.7
OPR RESULTS-ORG	5,603	(1,219)	6,822	559.6	4,607	(3,416)	8,023	234.9

ANALYSIS OF REVENUE AND EXPENSE - ORGANIC
BUDGET VARIANCES

REVENUE

AIRCRAFT REPAIR & MOD

ACUTAL	BUDGET	VARIANCE	%
$22,338	$19,101	3,237	16.9

CAUSE: The primary cause continues to be the result of additional nonprogrammed work load, emergency TCTO's and F4 carryover sold in November (see prior months narrative). The December revenue was right on target.

GET WELL: 30 Sep 84 or on submission of new targets.

OTHER MAJOR ITEMS

ACTUAL	BUDGET	VARIANCE	%
$10,308	$9,296	$1,012	10.9

CAUSE: The cause for this variance is twofold. First, there were scheduled changes and more FY83 carryover than anticipated which resulted in sales of 8.6 thousand more hours than projected (194 thousand). This caused a volume variance of $412 thousand. The actual revenue rate (49.87) was 2.10 per hour greater than the planned (47.77), causing a rate variance of $426 thousand. The rate variance was caused by a difference in mix between FY83/84 inputs and in-programmed (G) vs nonprogrammed (H) work loads.

GET WELL: Additional Navy work loads and unplanned TDY requirements will cause this variance to continue through the fiscal year or until new targets are submitted.

REVENUE - CONT'D

OVERHAUL EXCHANGE ITEMS

ACTUAL	BUDGET	VARIANCE	%
$49,918	$42,545	$7,373	17.3

CAUSE: There were 20.6 thousand more hours of sales in exchangeables than expected causing a volume variance of 1.1 million. The rate variance was the major cause (6.3 million) for the over budget condition.

Revenue generations of $60.87 per hour exceeded our planned composite MISTR revenue rate ($53.22) by $7.65 per hour. This variance resulted from the use of MISTR planning rates that were based on projected RCC costs developed in the FY84 budget cycle (Aug 82) and were modified by the program budget decision (Jan 83). These estiamted RCC costs were weighted by planned labor application hours to determine a planning rate for each managing ALC.

The actual exchangeable sales are based on labor and material standards that are developed for each of the 7 thousand different items that are repaired at Sacramento ALC. The actual price was computed on standards that were in effect in Jul 83. There is no direct relationship between planning rates and end item sales prices. While many prices were reduced during the FY85 budget cycle (Aug 83) in order to align prices to planning rates, the number of pricing alternations and budget revisions during this cycle may have distorted our efforts. The actual revenue generated during this quarter indicates that revised forecasts may be necessary pending results of studies outlined in the operating results narrative.

GET WELL: 30 Sep 84 or on revised target submission.

REVENUE - CONT'D

OTHER REVENUE

ACTUAL	BUDGET	VARIANCE	%
$6,267	$7,581	$(1,314)	-17.3

CAUSE: Reasons for the variances are below.

RGC	BUDGET	ACTUAL	VARIANCE	%
M/N	1,818	2,454	+636	+35
P/R	2,787	2,291	-496	-18
S	2,976	1,274	-1,702	-57
Misc	0	248	+248	
TOTAL	7,581	6,267	-1,314	-17

RGCs

M/N - Actual YTD sales exceed buget by $636 thousand due to increased aircraft/engine support for 41st RWRW and MME engineering aircraft support.

P/R - Budget exceeds YTD sales by $496 thousand. This was caused by the unpredictability of monthly sales on unprogrammed work load. YTD projection is in concert with present known requirements and as more cummulative history generates, the YTD variance should align with annual budget projection.

S - Budget exceeds YTD sales by $1702 thousand. This was caused by delays in the input and sales of negotiated software work load. YTD projection is in concert with present known requirements and as more cummulative history generatates, the YTD variance should align with annual budget projection.

GET WELL: 31 Mar 84.

REVENUE (CONT'D)

LESS PUR RATE FACTOR

ACTUAL	BUDGET	VARIANCE	%
$416	$303	$113	37.2

CAUSE: The sole reason for this variance is a greater number of FY84 hours being sold in the first quarter than expected. This was caused by production in excess of the PLA and more first quarter MISTR completions than expected.

GET WELL: 31 Mar 84.

DIRECT PRODUCTION - LABOR

ACTUAL	BUDGET	VARIANCE	%
$28,719	$26,820	$1,899	7.1

CAUSE: We continue to have a work load volume variance of 8.8 percent above YTD budget. This 114 thousand hours above budget drives our labor costs up by a corresponding amount. These hours were primarily due to more production workers on board than were projected by the budget PLA and capability sheet.

GET WELL: Our work load will more closely match our targets in the second quarter, and YTD costs will fall in line with projected targets as the difference between projected PLA, direct PE's, and actual assigned diminishes.

REVENUE (CONT'D)

DIRECT PRODUCTION - MATERIAL

ACTUAL	BUDGET	VARIANCE	%
$27,778	$23,974	$3,804	15.9

CAUSED: The major factor affecting the direct material variance can be attributed to 106 thousand more earned hours over those predicted in our budget. During December alone, we produced 70 thousand more hours than projected. Our YTD hours are 1.7 million versus budgeted hours of 1.6 million. Also, in projecting our consumption we assumed December production would be considerably less due to the holiday season and extensive leave being taken. Past history supported this assumption. Actual direct material issues were slightly ($100,424) below November's consumption, versus approximately 2.9 million reduction between these same months last year.

GET WELL: Although our first three months experience is slightly ahead of our total annual program (1.7 percent), we envision further fiscal year experience will stabilize/offset and bring our program into alignment. 29 Feb 84.

DIRECT PRODUCTION - OTHER

ACTUAL	BUDGET	VARIANCE	%
$773	$900	$(127)	-14.1

CAUSE: Operational TDY expense is the cause of our variance in this category. Our current YTD operational TDY per diem costs are a negative $32 thousand. This results from several factors. The major one is an over-estimate of prior fiscal year expenses and a lag in actual recording of final expenses and their transfer from unallocated costs to actual expenses.

GET WELL: 31 Jan 84.

PRODUCTION OVERHEAD - MATERIAL

ACTUAL	BUDGET	VARIANCE	%
$5,382	$6,603	$(1,221)	-18.5

CAUSE: In terms of an hour rate, this equals approximately $.28 per hour below our budget (budgeted rate was $3.39 versus an actual rate of $3.11). Our FY84 rates were based on actual history plus the furnished inflation guidance. The end result was a reduction of $.20 per hour over our FY83 rates. With further experience into the fiscal year alignment of budgeted versus actual a negligible variance should result.

GET WELL: 31 Jan 84.

PRODUCTION OVERHEAD - OTHER

ACTUAL	BUDGET	VARIANCE	%
$98	$40	$58	145.1

CAUSE: The variance is caused by the actual reporting of our production divisions administrative/training TDY and tuition expenses as production overhead. These same expenses were budgeted under G&A per HQ direction. The majority of these expenses are in support of direct production. Prime examples would be work load negotiations and electronic and machinists apprentice programs. This disconnect will continue through FY84.

GET WELL: Sep 84.

GEN & ADM OVERHEAD - LABOR

ACTUAL	BUDGET	VARIANCE	%
$4,734	$5,198	$(464)	- 8.9

CAUSE: The G&A Labor costs will decrease an additional $1,139. Costs for production division quality personnel have been included in G&A rather than production overhead. The accounting correction will be input to correct YTD costs during January 1984.

GET WELL: The variance continues for the remainder of the year or until new targets are submitted.

GEN & ADM OVERHEAD - MATERIAL

ACTUAL	BUDGET	VARIANCE	%
$878	$(1,825)	$2,703	148.1

CAUSE: A positive $2.4 million in accounting and inventory adjustments were the direct cause of this variance. Some adjustments were anticipated in our budget submission, but not to this magnitude. General Ledger Account Code 56699, Miscellaneous Inventory Changes adjustments for December alone went from a negative $2.7 million to a negative $254 thousand. The current AFLCR 170-10 instructions use this account to force balance material inventories with the D033 MIC value report. The majority of these ajdustments actually arise from activity in the direct and indirect material accounts.

GET WELL: 30 Sep 84.

GEN & ADM OVERHEAD - OTHER

ACTUAL	BUDGET	VARIANCE	%
$7,057	$11,350	$(4,293)	-37.8

CAUSE: The major contributor to the variance under this category was an arbitrary accounting adjustment of approximately $2.4 million reduction in expenses in their attempt to force balance unallocated costs and the Work in Process account. Without this adjustment, our variance would be $1.9 million.

GET WELL: This situation will not be resolved without the addition of another account for unallocated costs in the expense portion of the income statement. SM-ALC/ACFC is establishing a control for unallocated costs in the statistical accounts to preclude recurrence.

OPERATING RESULTS

ACTUAL	BUDGET	VARIANCE	%
$4,607	$(3,416)	$8,023	234.9

CAUSE: The primary cause is the over budget profit in exchangeables. YTD revenues for exchangeables were $7.3 million over budget (see associated narrative for exchangeable revenue) and the YTD costs were on target resulting in the 7.2 million profit. An indepth study of the exchangeable work load is being performed to determine causes for the understatement of revenue. The study should be completed within 45 days.

GET WELL: 30 Sep 84 on upon submission of new targets.

CUMULATIVE PROFIT/LOSS

	REVENUE	COST *	P/L
AIRCRAFT	$22.3	$22.2	.1
OMEI	10.3	9.1	1.2
EXCHANGEABLES	49.9	46.7	3.2
AREA/BASE	2.5	2.3	.2
LOCAL MANUF	2.5	2.5	---
SOFTWARE	1.3	1.3	---
SUBTOTAL	88.8	84.1	4.7
LESS PURCHASE RATE FACTOR	.4	.3	.1
GRAND TOTAL	$88.4	$83.8	4.6

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SUPPLEMENTAL DATA

MATERIAL COSTS

DECEMBER 1983

($ IN THOUSANDS)

	MONTH ACTUAL	FYTD ACTUAL
MATERIALS		
DIRECT MATERIAL		
SSD	7,161	18,795
GSD	2,935	9,232
TOTAL	10,096	28,027
INDIRECT MATERIAL		
SSD	252	312
GSD	4,464	5,534
*OTHER	124	414
TOTAL	4,840	6,260
GRAND TOTAL	14,936	34,287

*Fuels

SACRAMENTO ALC
DEPOT MAINTENANCE SERVICE, AIR FORCE INDUSTRIAL FUND
STATEMENTS OF REVENUE AND EXPENSE - CONTRACT
FOR THE PERIODS INDICATED
($ IN THOUSANDS)

	MONTH OF DEC. 1983				3 MONTHS ENDED 31 DEC. 1983			
	ACTUAL	BUDGET	VARIANCE		ACTUAL	BUDGET	VARIANCE	
	$	$	$	%	$	$	$	%
REVENUE								
AIRCRAFT REPAIR & MOD.	5,466	7,186	(1,721)	-23.9	19,487	25,713	(6,226)	-24.2
MISSILE REPAIR & MOD.	0	0	0	0.	0	0	0	0.
ENGINE OVERHAUL	0	0	0	0.	0	0	0	0.
OVHL. EXCHANGE ITEMS	3,209	3,113	96	3.1	15,358	15,987	(629)	-3.9
OTHER MAJOR ITEMS	85	289	(204)	-70.5	458	869	(411)	-47.3
OTHER REVENUE	0	0	0	0.	0	0	0	0.
TOTAL REVENUE	8,759	10,588	(1,829)	-17.3	35,302	42,569	(7,267)	-17.1
DIRECT PRODUCTION								
CONTRACTOR CHARGES	6,873	6,935	(62)	-0.9	18,758	21,179	(2,421)	-11.4
MATERIAL USED	472	1,223	(751)	-61.4	1,681	2,477	(796)	-32.1
TOTAL DIRECT PROD	7,345	8,158	(813)	-10.0	20,438	23,656	(3,218)	-13.6
GEN & ADM OVERHEAD								
LABOR	137	176	(39)	-22.1	448	526	(78)	-14.8
MATERIAL	0	0	0	0.	0	0	0	0.
OTHER	1	6	(5)	-75.5	6	13	(7)	-50.2
TOTAL G&A OVERHD	139	182	(43)	-23.9	455	539	(84)	-15.7
TOTAL COST & EXP	7,483	8,340	(857)	-10.3	20,893	24,195	(3,302)	-13.6
ADD: BEG BAL WIP	119,115	0	119,115	100.0	131,422	131,422	0	0.
SUB-TOTAL	126,598	8,340	118,258	1418.0	152,315	155,617	(3,302)	-2.1
LESS: END BAL WIP	117,945	(2,280)	120,225	5273.0	117,945	113,274	4,671	4.1
TOTAL COST	8,653	10,620	(1,967)	-18.5	34,370	42,343	(7,973)	-18.8
OPR RESULTS-CON	106	(32)	138	432.8	932	226	706	312.4

ANALYSIS OF REVENUE AND EXPENSE - CONTRACT
BUDGET VARIANCES

REVENUE

AIRCRAFT REPAIR & MOD

ACUTAL	BUDGET	VARIANCE	%
$19,487	$25,713	(6,226)	-24.2

CAUSE: The variance is due to late production input by the Production Management Specialist (PMS) in the GO72D system of three F-111 aircraft.

GET WELL: Additional PMS training is being developed. Production input will be current in Feb 84.

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OTHER MAJOR ITEMS

ACTUAL	BUDGET	VARIANCE	%
$458	$869	$(411)	-47.3

CAUSE: The variance is due to the longer lead-time than originally forecast for the IYC8 Telecommunications System. This situation is expected to continue until mid-year.

GET WELL: Jun 84.

COST & EXPENSES

CONTRACTOR CHARGES

	ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
	18,758	21,179		
LESS CHANGE IN WIP	(13,448)	(18,148)		
	32,206	39,327	(7,121)	18.1

CAUSE: Failure to meet December revenue targets caused a corresponding failure to meet the Contractor Charges target.

GET-WELL: 31 Jan 84.

MATERIAL CHARGES

	ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
	1,681	2,477		
LESS ACTUAL CCN RENTAL CHARGES AND . STANDARD EXPENSES - OTHER	(94)			
	1,775	2,477	(702)	.3

CCN RENTALS

ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
5	5	0	0

COSTS & EXPENSES (Cont)

DMM, ACD, AND ACF SUPPORT SERVICES

ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
448	526	(78)	14.8

CAUSE: The FY83 budget was used as a basis for reimbursing O&M fund for support services, because the FY84 budget was not available. When the budget is available reimbursement will be made accordingly.

GET-WELL: 31 Jan 84.

TDY SUPPORT

ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
6	8	(2)	25

CAUSE: TDY trips are sporadic, while the monthly target is computed on 1/12 of the annual budget.

GET-WELL: 1 Oct 84.

OPERATING RESULTS

ACTUAL $	BUDGET $	VARIANCE $	VARIANCE %
932	226	706	312.4

CAUSE: $949 thousand is attributed to the unit sales price exceeding the unit repair cost. These contracts are FY83 and prior years.

GET-WELL: This situation will continue until final production has been completed.

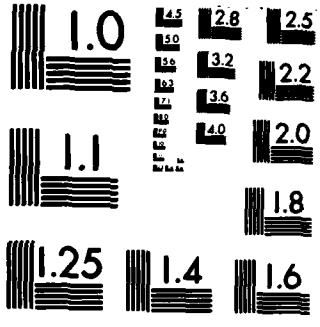
APPENDIX F

TEN INTERFACING SYSTEMS

DO 32	Inventory Manager Stock Control and Distribution System
EO 46A	AFLC Standard Data System
GOO 1C	Maintenance Data Collection System
GOO 4K	Maintenance Facility Master Plan System
GO 17	Depot Plant Equipment Program System
GO 28	Maintenance Engineering Data Support (MEDS) System
GO 37F	Mission, Design and Series (MDS)/Project Workload Analysis Planning System
GO 72C	Depot Maintenance Program and Long Range Planning System
GO 98	Maintenance Requirements Data System (For Analytical Interval Determination)
GO 46	Maintenance Job Tracking System

AD-A150 753 DOCUMENTATION AND EVALUATION OF DEPOT LEVEL MAINTENANCE 2/2
COST ACCUMULATION..(U) NAVAL POSTGRADUATE SCHOOL
MONTEREY CA F D GORRIS JUN 84

UNCLASSIFIED F/G 5/1 NL



APPENDIX G

DOD 7220.29 OBJECTIVES AND USE

A. OBJECTIVES

The principal objective of this handbook is to establish a uniform cost accounting system for use in accumulating the costs of depot maintenance activities as they relate to the weapon systems supported or items maintained. The handbook provides principles and procedures to assure uniform recordation, accumulation, and reporting on depot maintenance operations and maintenance support activities. The cost system will be controlled by a double-entry, accrual-based general ledger accounting system.

The information ...will assist in the measurement of productivity, the development of performance and cost standards and determination of areas for management empahsis...

B. MANAGEMENT USE OF UNIFORM DEPOT MAINTENANCE COST AND PRODUCTION DATA

Managers will have available to them from the cost and production reporting system a wealth of depot maintenance and maintenance support management data which may be used to:

(1) Develop the depot maintenance and maintenance support work programs;

(2) Measure actual utilization of resources against planned programs;

(3) Provide managerial direction and guidance with respect to the status of programs;

(4) Develop standard unit costs of depot maintenance work;

(5) Compare unit cost incurred to the standard unit cost of work completed;

(6) Compare unit cost incurred with the alternative of replacement cost;

(7) Compare cost among organic depots or between organic and contract sources;

(8) Evaluate depot maintenance and maintenance support activities for efficient use of resources, and identify marginally efficient maintenance activities;

(9) Assist in control of cost over/under--runs.

C. Reports to the Congress and the general public concerning and consumption of resources in the performance of depot maintenance and maintenance support will be facilitated and made more credible.

APPENDIX H

1397 REPORT TABLES

Table 1	Total Depot Maintenance Cost
Table 2	Cost by Program Element and Commodity
Table 3	Cost by Facility Type and Commodity
Table 3A	Cost by Facility Type and Commodity, Depot Maintenance Work Performance Categories
Table 3B	Cost by Facility Type and Commodity, Maintenance Support Work Performance Categories
Table 4	Selected Facility Performance Statistics
Table 5	Cost by Facility and Commodity
Table 6	Cost Breakdown by Organic Depot Maintenance Activities
Table 8	Cost Breakdown by Contract Activities
Table 9	Cost Breakdown by Interservice Activities
Table 10	Total Cost by Weapon System and Non-Maintenance Support Work Performance Categories
Table 11	Total Cost by Weapon System and Maintenance Support Work Performance Categories
Table 12	Items Maintained in excess of 100% of Standard Inventory Price by Facility
Table 13	Total Cost by Weapon System and Work Breakdown Structure

Table 14 Items Repaired at More Than One Facility--
Criterion--Prod Qty X Total Cost GTE $50,000

APPENDIX I

TEMPORARY WORK REQUEST DBF 30931

TEMPORARY WORK REQUEST ☒ ADD ☐ CHG ☐ DEL — 1. REQUEST NO: DBF30931

PART I — INITIATOR

2. CUST IDENT	3. TRC WTC	4. PHONE NO	5. END ITEM IDENTITY	6. JOB QTY
HDSDR	HMAIVW	36756	4720Φ0Φ4 8ΦΦ73	ΦΦΦ01

7. PCN	8. PON	9. DELIVERY DATE	10. PSC	11. UI	12. PRI	13. AUTHORITY
RP-RAC	346473	40127	M	EA	5	EFB 2Φ493213 X5ΦΦ

14. EST JOB TOTAL COST	15. ERAC	16. FSC-MCC
ΦΦΦΦ148	N	T 1

17. JOB DESIGNATOR (Circle only one below)

A	OVERHAUL	F	RENOV TEST	(K)	MFGR	R	TECH ENGRG DATA
B	POM	G	ANALYT EVAL	L	RECLAMATION	T	NON MAINT WORK
C	CONVERSION	H	MODIFICATION	M	N STORAGE MTN	V	MODULAR MAINT
D	ACTIVATION	I	O & I MAINT	N	TECH DEP ASSIST	W	ON COND MAINT
E	PREP STORAGE	J	CONDITION CHECK	O	S E SUPPORT		

18. ALTERNATE EII

ALTERNATE EII

ALTERNATE EII

ALTERNATE EII

GEN. SUPPORT STOCK FUND

19. SPECIAL INSTRUCTIONS

HOSE ASSEMBLY.
P/N AN6270-4-9.
FSMC 81044.
DRAWINGS TIME FURNISHED BY MAINTS.

NEED DATE 831101

MAC - A3.
ON HOSE
CN 016708
OPR 02050
JON 558.
CL R.

MBPFCL 3Φ8Φ 6447

20. UNIT PRICE: 23.43

21. NOUN: HOSE ASSEMBLY

22. INITIATOR SIGNATURE DATE: Esther M. Clements 1 Aug 83

23. OSC SIGNATURE DATE: G Champagne 8/1/83

24. ACCTNG CLASSIFICATION: FCRN 6384

25. APPROVAL Signature: G Champagne R3R — ORGANIZATION: DSDA13A — DATE: 8/1/83

26. FUNDS AVAILABLE Signature: Carol Smith — ORGANIZATION: DSDO — DATE: 8/1/83

PART II — CONTROL NO DATA

27. REQUEST NO.	28. REV DIV	29. FCRN	30. CRD JID	31. DPC	32. PS S/D	33. PO-PTC	34. NTC
DBF30931	B	6384	M80684K	T	MBPH B	MABE	MAIVWG

35. WORKLOADER SIGNATURE: R. B. Little MAWRA 8AUG83

36. APPROVAL SIGNATURE

AFLC FORM 206 — PREVIOUS EDITION IS OBSOLETE

TEMPORARY LABOR AND MATERIAL PLAN

1 JCN / JID	2 PO / PTC		11 PLANNER SIGNATURE AND DATE
MSCK8K	MABFBB		[illegible signature] 8/1?/8?

3 JCN (NEW)	4 PS / S/O	5 OTHER DIR COST	6 PCI	7 BOMI	8 UOM	9 ADD NO	10	12 QAS SIGNATURE AND DATE
	MBPH9 B	ØØØØØØØØ	M	R	EA	Ø	PAGE 1 OF 1 PAGES	

LABOR PLAN

13 RCC	14 OPER NO	15 DSPI	16 RO	17	18 OP STD HRS	19 SH	20 OPERATION DESCRIPTION
MBPHBG	ØØØA1	B	ØØ1		ØØ1.75	SC	MFG ?EA HOSES AN AN6270-4-9
MBPHBG	ØØØØ2	B	ØØ1		ØØØ.20	SC	ITEM COMP

BILL OF MATERIALS

21 OPER NO	22 MATERIAL NSN	23 PART NUMBER	24 MFR CODE	25 UI	26 QUANTITY	27 SIR LIST PRICE	28 CC

29 SII / PLANNING	30 PRODUCTION SUPERVISOR	31 SCHEDULER
COMPLETE / X INCOMPLETE		

AFLC FORM MAR 81 237

PREVIOUS EDITION IS OBSOLETE

APPENDIX J

TEMPORARY WORK REQUEST DBF 30933

TEMPORARY WORK REQUEST | [X] ADD [ ] CHG [ ] DEL | 1. REQUEST NO: DBF30933

PART I — INITIATOR

2. DUST IDENT	3. TRC WTG	4. PHONE NO	5. END ITEM IDENTITY	6. JOB QTY
HDSDR	HIMAWW	3675647200000473		00003

7. SCN	8. POM	9. DELIVERY DATE	10. PSC	11. U.I	12. PRI	13. AUTHORITY
RRHRAC3447		840127	M	EA	SE	FD2Q4932132X502

14. EST JOB TOTAL COST	15. ERAC	16. FSC/NIIC
00000008	N	TA

17. JOB DESIGNATOR (Circle only one below)

A	OVERHAUL	F	RENOV TEST	K	MFGR	R	TECH ENGRG DATA
B	POM	G	ANALYT EVAL	L	RECLAMATION	T	NON MAINT WORK
C	CONVERSION	H	MODIFICATION	M	IN STORAGE MTN	V	MODULAR MAINT
D	ACTIVATION	I	O & I MAINT	N	TECH DEP ASSIST	W	ON CONC MAINT
E	PREP STORAGE	J	CONDITION CHECK	Q	S E SUPPORT		

18. ALTERNATE EII

ALTERNATE EII

ALTERNATE EII

ALTERNATE EII: GEN SUPPORT STOCK FUND

19. SPECIAL INSTRUCTIONS

HOSE ASSEMBLY
P/N - AN 6270-4-9
FSMC 99044
DRAWINGS TO BE FURNISHED BY MMEDS.
NEED DATE 831101

MDPP9D 3007 7304 OPT 0123 1EA
MBPP9D 3101 7311 OPT 0133 2EA.

20. UNIT PRICE: 23.98

21. NOUN: HOSE ASSEMBLY

MSC A3
ON DK201
CN UG100
CCL

22. INITIATOR SIGNATURE/DATE: Esther A. Olvis 1 Aug 83

23. DSO SIGNATURE/DATE: D. Champagne 8/1/83

24. ACCTNG CLASSIFICATION: FCRN 6384

25. APPROVAL (Signature): D. Champagne — ORGANIZATION: R3R - DSDRBA — DATE: 8/1/83

26. FUNDS AVAILABLE (Signature): Carol Smith — ORGANIZATION: DSDO — DATE: 8/1/83

PART II — CONTROL NO DATA

27. REQUEST NO	28. REL DIV	29. FCRN	30. CN	JD	31. OPC	32. PS	SD	33. PO	PTC	34. WTC
DBF30933	B	6384	M80722K		T	MBPH	9B	MA	BE	BEMAWWG

35. WORKLOADER SIGNATURE: R. B Little MAWWA 8AUG83

36. APPROVAL SIGNATURE

AFLC FORM AUG 76 206 — PREVIOUS EDITION IS OBSOLETE

TEMPORARY LABOR AND MATERIAL PLAN

1 CN	2 PD		11 PLANNER SIGNATURE AND DATE
MS0512K	MABEBB		Wendell ... 8/10/83

3 JD NEW	4 PD	5 OTHER DIR COST	6 PCI	7 BOMI	8 UOM	9 ADD NO	10	12 QAE SIGNATURE AND DATE
	MBPH9B	000000000	M	R	EA	Ø	PAGE 1 OF 1 PAGES	

PLAN

13 RLC	14 OPER NO	15 BSPI	16	17	18 OP STD HRS	19 SR	DESCRIPTION
MBPHBC	00001	B	001		10000	SC	MFG BEAN HOSE PN AN6270-4-9
MBPHBC	00002	B	001		00034	SC	ITEM COMA

BILL OF MATERIALS

21	22 NATIONAL NSN	23 PART NUMBER	24 MFR CODE	25 UI	26 QUANTITY	27 STK LIST PRICE	28 CL

29 STATUS OF PLANNING: [ ] COMPLETE [X] INCOMPLETE

30 PRODUCTION SUPERVISOR

31 SCHEDULER

AFLC FORM 237

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LIST OF REFERENCES

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